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ART. I. *Experiments on Absorption.* By JOHN W. DRAPER, M. D. Christiansville, Mecklenburg, Va.

1. If we could place a known volume of vapour in the centre of an extensive void, where no disturbance from without could solicit its particles to move in one direction rather than another, it is to be supposed, that, conformably to certain laws that are known to obtain and operate on bodies of an aerial constitution, movement would ensue. To an assignable limit the vapour would expand, by a species of repulsion of its own particles. In the immense vacuum in which the solar system moves, there are orbs that seem to fulfil this condition; these, though they wander through very large paths, and are disturbed by the reaction of bodies they move past, sufficiently approximate the circumstances here laid down, to show that there is an extent, beyond which, bodies, so constituted, are not disposed to expand. Astronomical observations also show, that gases such as our own atmosphere is composed of, do not by their expansion trespass beyond a given point into a void, for then the laws upon which they are formed, react as the firmest barrier from without would do, to prevent their further extension.

2. An orb, so constituted, could not in any length of time, undergo any change of composition, structure, or figure. For, so soon as the first motion was over, which decided its equilibrium, that equilibrium would remain undisturbed, unless forces from without were brought

to bear upon it. In a void, such as we are here supposing, apart from any such derangement, equally a void as to force as well as to matter, the vaporous mass could not be subject to any contingency.

3. Let us extend our supposition, by placing another volume in presence of the former, and differing from it in chemical composition alone. That difference would determine certain motions of penetration, in addition to those resulting from mere mechanical action. Not only would the united mass move, so as to assume a mathematical equilibrium, but its constituent parts would also move, so as to establish a chemical equilibrium at the same time. Wherever an atom of one of the vapours existed, there would be found one of the other also. To bring about this result, a mutual penetration of parts is demanded, a transit of the constituents of one vapour among those of the other. The motions that effect this arrangement, take place without any resistance, just in the way that the light of a distant star comes into our system undeterred by the rays of our sun, and moves freely in every direction; his beams also move in the vacuum, intersecting the paths of other luminous bodies, without any hindrance or shock.

4. In this state of extension, when the component atoms of a gas or vapour, are supposed to be stretched to their utmost limit, which we are prone to suppose can only be done by an increase of the distance usually existing between an atom and its neighbours, it is not difficult to suppose that these different motions can go on, and that a foreign atom may insinuate itself in the interstices between others. But our ideas of space and size being only relative, and as we know nothing of the dimensions of an ultimate atom, nor of the interval that parts it from those around it, it is plain we could not without actual experiment determine when a body had arrived at that state of condensation, or when its particles had become so closely approximated to each other as to refuse the admission of foreign atoms between them.

5. A mass of any kind, in a vacuum, and undisturbed, moves, therefore, only in that manner which the laws of dynamics indicate. Motions of another kind, however, are induced when the vacuum is changed for a substance; a kind of penetration, permeation, or absorption is the result; nor do the mechanical conditions of bodies appear to have any effect on this: with some of these phenomena we are familiar. A gas, a liquid, or a solid, may indiscriminately pass by solution into the pores of water, without any reference to their aggregation. A variety of words have been used to express this action; solution, endosmosis, permeation, &c.; but parting from the simplest

experimental condition, we shall have occasion to see that all these refer to varieties of *one phenomenon only*.

6. Binary arrangements.—If a solitary body has thus no opportunity of exhibiting the conditions of its own arrangement, as to structure or the forces that inhabit the interstices of its atoms, it is very different with a binary arrangement. Chemists are familiar with the phenomena exhibited when gases, solids, or liquids are exposed to each other, under those circumstances where no direct change of composition ensues. Thus, if a cubic inch of carbonic acid gas be exposed to a cubic inch of water, the gas in a short time passes into the liquid mass, or is absorbed by it, with a certain degree of force, and to a certain amount. Also, aqueous gas rises from the water, and diffuses itself into the unabsorbed remainder of the carbonic acid. After a sufficient time, no part of the carbonic acid will be found destitute of aqueous gas, nor will any part of the water be without its equivalent of carbonic acid. The simplest example of these combinations is furnished by the solution of saline bodies in water, where there is no change of chemical composition, but merely a detachment of the solid crystalline particles from the mass of the dissolving substance; these pass among the interstices of the liquid, and remain there, unaffected by gravity, being equally and uniformly diffused. Of the powers by which this is brought about, we are not well informed, but no fact in science is better ascertained than this uniform and equable diffusion. If, by affinity, we mean a power that causes substances to unite with an interchange of elements, or only exerted to bring about an alteration of composition, such a force is obviously insufficient to give rise to these effects.

7. That one particle has the power of attaching itself to another of a dissimilar kind, without any thing like change of composition, numerous facts demonstrate. The most delicate dyes that adhere to cloth-fibre offer an example; they cannot be supposed to be attached by any force affecting either their composition or structure, since the successful operations of the artist proceed upon the supposition that the tint shall remain unimpaired, and the strength and organization of the fibre which is dyed shall remain untouched. Now, in those cases where we know that the dying material acts chemically on the fibre, is there not abundant proof that the elementary changes affect the uniting bodies? is not the hue of the dye changed, and does not the fabric become rotten? Other facts also show that these adhesions, without chemical change, are possible; the foil on the back of a mirror is not retained by the exercise of any force which has brought about a change in its composition. When the dye is washed off, or the foil

scraped away, the cloth-fibre and the looking-glass are both found in their original integrity of structure.

8. The cases here cited furnish examples of one solid uniting to another in a manner that involves something different from the action of chemical affinity. There is a whole range or class of similar combinations; a solid may unite thus with a liquid, as sugar and water; a liquid with a liquid, as alcohol and water; a liquid with a gas, as carbonic acid and water; or a gas with a gas, as oxygen and nitrogen or the atmosphere. All these are cases where there is no interchange of chemical elements, and which we cannot therefore suppose to ensue in virtue of chemical force.

9. Although these actions are the result of a kind of adhesion of particle to particle, and might therefore be supposed to take place in an indiscriminate or irregular manner, there are some remarkable circumstances attending them, which go to show the contrary; thus water will dissolve a certain quantity of sulphuric ether and no more; it will take up its own volume of carbonic acid and no more; it will hold in solution of bisulphate of potash, sulphate of ammonia, protosulphate of iron, bicarbonate of potash, chromate of potash, muriate of strontian, &c. half its weight, at 60 F. At the same temperature it dissolves its own weight of sulphate of magnesia, and this comparison might be extended much farther. The same kind of predilection for definite quantities obtains also in gases, as is the case with atmospheric air where the proportions of oxygen dissolved in nitrogen, is as one to four.

10. All these things go to prove that the passage of the particles of one body among the particles of another, proceeds upon certain and definite laws. Whether the residence of saline atoms among the interstices of a liquid is a phenomenon of the same sort as the adherence of dye to a fibre, it is not material to inquire. We know, by experiment, that a solitary gas has a tendency to expand itself to a certain extent, but not further; and we are equally assured, that bodies, whether of the same or of different kinds, have an inclination to penetrate into each other. Where there is an apparent indisposition to do this, we are not without plausible reasons for supposing it through the intervention of disturbing causes. If oil and water do not commingle, it is a result determined by the action of their cohesion, as compared with the force of attraction between them. An interesting example of this nature is afforded by the action of mercury on glass; under ordinary circumstances they show no disposition to unite, not even so much as water and oil; but, by a suitable application of heat, the cohesion of the mercury may be so lessened, and its force of attrac-

tion for glass at the same time so exalted, that it can be brought to *wet* it; an experiment first successfully performed by Laplace.

11. This *nisus*, or endeavour of one body to diffuse itself into the interstices of another has, under a variety of forms, been long recognised. The solution of salts, the absorption of gas by liquids, the passage of liquids through crystals, the permeation of porous textures, the diffusion of gases, the languid movement occurring in solids, were known long ago. Of late years, some extension of these facts has been obtained, and the new phenomenon, though explicable on the same principles, is dignified by the title ENDOSMOSIS.

12. For the explanation of the whole of this most interesting series of results, one postulate alone is demanded. That *all bodies have a tendency to diffuse themselves into the interstices of all others, with more or less intensity.* Nor is it difficult to admit this principle in its fullest extent, when we consider the numerous examples philosophy affords of it. All kinds of chemical absorptions and solutions are cases of it. The disturbing causes which sometimes change or even entirely hinder these actions, we shall consider hereafter.

13. BINARY ARRANGEMENTS, or those in which *two* bodies are engaged, whether solid, liquid, or gaseous, exhibit some circumstances which it is here necessary to point out. Let us suppose the couple under consideration, as oxygen gas exposed to an equal volume of water. No remarkable phenomena attend the passage of the gas into the liquid, there is no rise of temperature, and the whole amount absorbed is greatly less than the bulk of the water. If another gas be substituted, as carbonic acid, though much more soluble, there is still no indication of change of temperature, but ammonia and chlorohydric acid condensing to a much greater amount, disengage much heat. Another couple might be assumed, as charcoal or porous masses, with oxygen or other gases, and similar indications be obtained.

14. If, after a liquid has absorbed as much of any given gas as it is capable, we remove the remnant of unabsorbed gas, and in its place substitute some other of a different kind, complex reaction ensues. The gas, already absorbed by the water, has its condition of equilibrium disturbed, and in conformity with the general principle, (12,) it has a tendency to diffuse itself out of the water into the newly introduced gas. This, in its turn, has also a tendency to pass into the water. Thus, if over a volume of water,

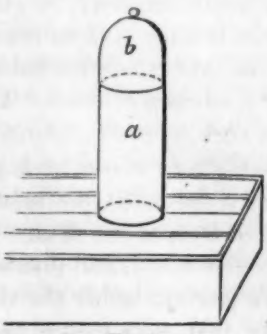


*Fig.* 1.

*a*, impregnated with carbonic acid, and confined in a jar over mercury, we placed a volume of oxygen, *b*, equilibrium would not be obtained until a certain amount of carbonic acid was found in the gas, *b*, and a certain amount of oxygen in the water, *a*. And the same would hold in the case of any other gases, or any other liquid. In the course of experiment, examples of this case are often met with. The water commonly used in pneumatic troughs, contains both oxygen gas and nitrogen. If, into a jar containing such water, we pass pure nitrogen gas, in the course of a few minutes the oxygen will leave the water to diffuse itself into the nitrogen. Had we thrown in pure oxygen, the nitrogen, on the contrary, would have deserted the water and mingled with the oxygen gas. In gaseous analysis, this action, which obtains to a greater or less extent with every gas, often gives rise to the greatest perplexity.

15. TERNARY ARRANGEMENTS.—It is plain that the conditions of the action considered in the last paragraph, may be obtained *at once* by suitable arrangements; and, as it is important that these should be well understood, I shall dwell upon them minutely.

16. In paragraph 14, we considered the reaction ensuing, first, of a single couple, or binary arrangement, and then the disturbance effected by the introduction of another element. Could we then, *at once*, have exposed the volume of water by one surface to oxygen gas, and by another to carbonic acid, the changes that were consecutive, would have been simultaneous. Let *a* be a sheet of water, on which, at its upper surface, a volume, *b*, of carbonic acid reposes, and, beneath its under surface, *c*, a volume of oxygen; both gases pass *at once* through the water in opposite directions, into each other. It is evident that the thinner we make the barrier of water, the more rapidly will equilibrium be obtained. This I have accomplished in the following manner, by using mere liquid films, and for that purpose have taken advantage of soap and other bubbles. A glass tube $\frac{1}{8}$ inch in the bore, and seven or eight inches long, is to be drawn out at one extremity to a capillary termination, and when the bubble is to be blown, the other end is dipped into a solution of soap. The tube having been previously passed through a cork, as in *Pl. I. fig.* 1, is now to be introduced into a clear vial or bell glass, whose neck the cork fits loosely; on blowing at the capillary termination the bubble slowly expands in the vial, where it is protected from access of air. To measure its diameter, I take a strip of white pasteboard, and divide it into inches and decimals, placing it in such a position before the vial, that it should cross the bubble diametrically, then with a small tele-

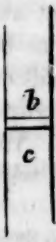

*Fig.* 2.

scope that magnifies twelve or twenty times, and at the distance of about eight feet, I observe the bubble much magnified, the micrometrical pasteboard apparently passing through its very substance, as is shown in *Pl. I. fig.* 2.

17. Through a soap bubble 1·53 inch in diameter, whose substance, previous to expansion, was contained in a cylinder $\frac{1}{8}$ inch in diameter and $\frac{1}{4}$ in height, ammonia, either pure or diluted with atmospheric air, passes instantaneously, when air from the lungs is on the other side. Into the bottle in which the bubble is to be blown, a little strong solution of ammonia is to be poured, the bubble is then expanded, at a particular point it becomes dyed with the richest hues, and that moment the phenomenon of endosmosis is complete—care must be had to suffer no moisture from the mouth to close the capillary termination of the glass tube—and now a rod, *a*, (*Pl. I. fig.* 2,) dipped in muriatic acid, is to be brought over the opening; as the bubble is collapsing by the attraction of its own parts, dense fumes of muriate of ammonia make their appearance, which continue until the substance of the bubble has entirely returned into the tube. The extraordinary rapidity of this action is remarkable. The bubble is scarcely blown before it is full of ammonia; and it is not less interesting to observe how the colours play with change of atmosphere. A little cylinder expanded to the size of a pea, which, in common air, is opaque white, and which would not be coloured until expanded to six or eight times that diameter, becomes deeply tinged as soon as it is penetrated by ammonia. If restored to the free atmosphere it loses all its beauty, and these alterations may be kept up at pleasure by merely changing it from one medium to another.

18. When, for the purposes of experiment, it is desirable to have a permanent bubble, a small column of moisture from the tongue must be allowed to close the capillary termination of the tube.

19. In the same manner sulphydrate of ammonia is found to pass with instantaneous rapidity through the film, and is to be detected by a paper dipped in acetate of lead. The colours in this case become very quickly stable, as with ammonia, and do not produce that iridescent play which the passage of certain other substances affords. It is, however, essential to the success of these experiments that the substances about to be passed through the film shall not have any chemical action upon it. Thus, it is not possible to use muriatic acid, which decomposes the soap, but there is no difficulty in the management of such as oxygen, hydrogen, nitrogen, &c. The passage of hydrogen through these films, is exemplified in the following table.

*Diameter of a bubble of hydrogen gas exposed to atmospheric air.*

| | When Blown. | In two Minutes. | × |
|---|---|---|---|
| Exp. 1, | ·460 | ·430 | ·430 |
| 2, | ·415 | ·390 | ·390 |
| 3, | ·425 | ·400 | ·400 |

*Diameter of a bubble of atmospheric air exposed to hydrogen gas.*

| | When Blown. | In two Minutes. | × |
|---|---|---|---|
| Exp. 1, | ·470 | ·485 | ·495 |
| 2, | ·360 | ·375 | ·380 |
| 3, | ·420 | ·435 | ·445 |

20. The third column, marked × in these tables, was taken when the black spot on the top of the bubble was about half an inch in diameter, for, as the coloured rings were the same in each experiment, and the surface incapable of reflecting light of equal extent, it is presumable that the measures were obtained under like circumstances, as far as the thickness of the film was concerned. In all cases the bubbles were blown by pressure on a gum elastic bag. This method of measuring the expansion, though suitable for general purposes, cannot, however, be extensively relied on, owing to thermal disturbance and the earth's action changing the figure from a true sphere to a prolate spheroid.

21. It is interesting to remark with what extraordinary rapidity these permeations take place. If we expand a small bubble in a vessel of ammonia, hydrogen, sulphuretted hydrogen, &c. by means of the mouth, and without removing the lips from the capillary opening of the tube, inhale *immediately* the contents of the bubble, the gaseous matter will impress the organs of taste with a very distinct savour, peculiar to the gas, on which the experiment is tried. There is a class of vapours which appear to possess little or no affinity for water, such as ether and the essential oils; these, however, percolate through tissues of water with rapidity. On covering the bottom of a vial with oil of peppermint, and then expanding a bubble, the taste of the essential oil will be perceived, when a portion of the air is drawn back out of the bubble into the mouth. With other oils, as cajeput, and with ethers the effect is the same; and it is to be observed that during the transit they work the surface of the bubble into a kind of microscopic waves and an iridescent play of colours.

To obviate any exception that might be taken to the use of soapy matter in these films, or to their excessive thinness, I have employed the following arrangement, which establishes the same truth. A tube,

*Fig. 3.*

*b*, open at both ends, and whose upper extremity is shaped into a trumpet-like expansion, has at *a* a disc of common writing paper, cemented water tight. The part, *b*, which is under *a*, being filled with hydrogen gas, and a thickness of water being placed on the disc, as *á a*, the lower end of the tube is closed by placing it on the shelf of the pneumatic trough.

23. Into such a tube I threw 200 measures of hydrogen gas, and the same quantity into one whose upper extremity was hermetically sealed, by way of affording a comparison. In the former the thickness of the roof of water was about $\frac{1}{8}$ inch, and, in 24 hours, the level of the water in it rose half an inch, whilst in the latter it remained undisturbed, thus incontestibly proving that hydrogen gas passes with great freedom through masses of water. Nor is this permeability confined to that liquid alone: a tube which was thus covered with a tissue of lamp oil, in five days raised the level of the water in it more than two inchês; and one whose roof was of copaiba balsam threw out all the gas to within $\frac{1}{8}$ of an inch of its top; whilst a tube of the same size, but sealed at the other end, that stood by them, kept its level.

24. It appears to me, the reason that we have not hitherto understood the phenomena of endosmosis, or the action of these ternary arrangements, as I have called them, has arisen chiefly from the employment of substances as barriers, which were possessed of pores of sensible size. A moment's consideration will place this in its true light; suppose two gases were kept apart by the intervention of a plug of charcoal in their diffusion into each other, not only would those portions pass the barrier which were brought along by a direct action, but a much larger quantity would *slip through by mere leakage* among the pores. Bladder, tissues, stucco plugs, &c. which we know to possess pores of sensible size, lay open to this objection; but the case is very different with liquids, which, from their uniform condition and the close proximity of their atoms, admit of no such action. A mass of stucco, a foot thick, would be subject to this kind of mechanical derangement, but a sheet of water reduced to that *excessive degree of thinness that it is invisible*, allows no gas to go through it by leakage, but all passes by absorption.

25. The original experiment of Dutrochet on Endosmosis, and those of Dr. Mitchell, were examples of this class of *ternary arrangements*. In these cases, membranes or gum elastic were tied over the

mouths of vessels, and the result was shown by the swelling or sinking of the barrier. These can be repeated, in a more satisfactory manner, with liquids. I took a vial, or glass tube, whose neck might be half an inch in diameter, and dipping the end of my finger into a solution of soap, I so passed it over the mouth of the vial as to leave a very thin filmy sheet there. The vial so situated, and of course filled with atmospheric air, was placed under a jar, covering a wine glass containing strong ammonia, as at *c*, *Pl. I.* fig. 3. The ammonia now passed instantly through the aqueous tissue, tinging it of the richest hues; at the same time I saw the bubble, which before was horizontal, raise itself up, *Pl. I*, fig. 4, its tints each moment varying, *Pl. I.* fig. 5. When it had risen so as to be considerably more than a hemisphere, as in *Pl. I.* fig. 6, a black spot appeared at its summit, and, as the bubble still expanded, the spot enlarged, until at length it appeared spread over the whole surface, *Pl. I.* fig. 7. The film of water was then perfectly invisible, except from certain positions, where the eye might catch its contour. Sometimes it would continue at this excessive thinness for a short period; a thinness so great that it was utterly unable to reflect light; but, at last, its cohesion yielding to the action forcing it out, it burst, closing one of the most beautiful experiments that the eye can behold.

26. In this experiment we also recognise an identity of results, with those which have heretofore excited so much attention, under the title *Endosmose;* but, understanding in this case, as we do thoroughly, the conditions under which the result is obtained, there is no difficulty in extending the explanation of one experiment to the other. ENDOSMOSE IS ONLY A COMPLEX CASE OF SIMPLE ABSORPTION. The mechanical results here obtained, the swelling or sinking of the barrier depends on the more rapid absorption of *one gas* by that barrier. The condition under which we obtain the mechanical result, will, by being duly varied, also furnish chemical results, an investigation of which forms our next object.

27. CHEMICAL DECOMPOSITION, *and first, by* BINARY ARRANGEMENT.—A solitary arrangement of any kind has no power of change in itself, whether it be of a simple or of a compound nature; but it is conceivable, that one of the latter kind—compound—on forming part of a binary arrangement, may be differently affected; as an illustration, let us take atmospheric air and water, appropriately situated, to form such an arrangement. In this case, were the nitrogen and oxygen equally absorbable by the liquid, no remarkable result would ensue; but such is not the fact; the oxygen gas passes much more quickly into the water than the nitrogen, and decomposition takes place. An excess of oxygen being in the liquid, and an excess of nitrogen being left.

We should, therefore, expect that rain and dew, and springs, and rivers which have been exposed in the most divided state to the air, ought to contain a gas richer in oxygen than that of the atmosphere; and such, in fact, is the case, the atmosphere containing one volume of oxygen and four of nitrogen, the gas of water containing one of oxygen and two of nitrogen, as we shall shortly find.

28. Instead of a gas and a liquid, to form these binary arrangements, a solid and a gas may be used. Into 500 measures of atmospheric air, a piece of charcoal, that had been made red hot and quenched under mercury, was placed. The volume of the air experienced a rapid diminution, and, after the absorption had gone on for several hours, there remained 205 measures, 100 of which contained only eight of oxygen. The charcoal was now introduced into water, over mercury, and commenced very actively evolving gas, which contained only 3·75 per cent. of oxygen, and the last portions of it that were given off, only 28. Solution of lime was not capable of detecting the presence of carbonic acid in the water.

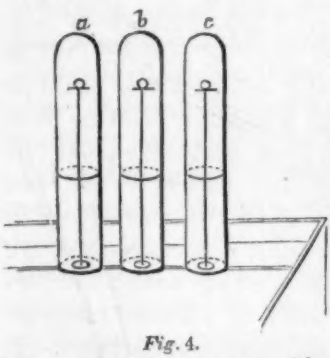

*Fig.* 4.

29. In the place of charcoal other porous solids might be substituted; into the jar, *a*, which contained atmospheric air, there was introduced a piece of red hot pumice stone; into *b*, a piece of clay, that had been made red hot; and into *c*, a piece of charcoal quenched under water. Absorption took place in them all, and, in a quarter of an hour, *a* was found to contain 19 per cent. of oxygen, shortly after *b* was found to contain 19 per cent. of oxygen, and *c*, in half an hour, only 18 per cent. Also, in five hours, *c* only contained 17·25 of oxygen, and in seven days, only seven per cent.; but, at the same time, *a* and *b* contained 14·50 per cent. Four days after *c* contained only five per cent.

30. By long boiling, I extricated all the air possible by such a process, from a quantity of water, and pouring it into a glass cup, left it exposed to the atmosphere for some days; at the end of that period the water was again boiled in a close vessel, and the gaseous matter it had absorbed submitted to analysis. After the carbonic acid had been carefully washed off, its amount being about 29 per cent., it was found that the residue contained 32½ per cent. of oxygen gas. It is a singular fact, that an aqueous tissue, in thus decomposing atmospheric air, appears to follow a very simple law; pure spring water and

distilled water, after a competent exposure to the atmosphere, are found to contain a gas whose elements are not in the proportion of *one* to *four*, as in the case with the atmosphere, but in the proportion of *one* to *two*. In several analyses of the air extricated by boiling from the water of my spring, which flows from a sandy bottom, and also from the dews which fall on a neighbouring hill, but too remote to be affected by the exhalations of dwellings, I found the proportion, when care was taken in the analysis, to be uniformly $33\frac{1}{3}$ per cent., or as 1 to 2 by volume. This gas, thus extricated, is isomeric with protoxide of nitrogen, with the particular exception that, in the protoxide, the two volumes of nitrogen are compressed into half their bulk.

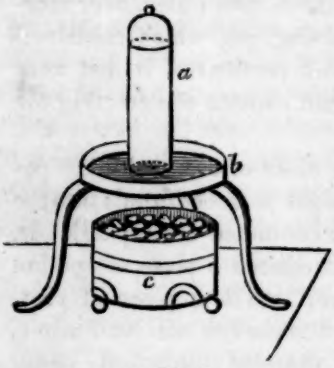

*Fig. 5.*

31. In a quart jar *a*, which was filled with spring water and inserted into a tin capsule *b*, I collected all the aeriform matter that could be disengaged from the water by means of a fire *c*, placed beneath the jar and its tin. This gas, from many prior trials, I knew to contain $33\frac{1}{3}$ per cent. of oxygen. When all the gas was collected that could be extracted, at a temperature long continued close upon the boiling point, the arrangement was suffered to cool, and kept undisturbed for four days; at the close of that time, considerably more than three-fourths of the gas disengaged was reabsorbed, the residue on analysis contained 5.25 per cent. of oxygen only. A portion of the water in the jar was now submitted to a boiling temperature in a small close vessel, and the gas collected was analysed. It contained, instead of $33\frac{1}{3}$, rather more than 47 per cent. of oxygen. There cannot, therefore, be any doubt, that oxygen may be obtained from the atmosphere, in a pure and undiluted state, by the action of a tissue, or a binary, and also a ternary arrangement.

32. Decompositions by ternary arrangements.—After this consideration of the case, in which two elements are employed, we are prepared to understand how ternary arrangements effect decompositions. Let *a* be a compound gas, which is placed above a barrier *b*, of such a nature, that one of the elements of *a* shall pass more rapidly through it, or, in other words, be more readily absorbed by it than the other. Also, let the other substance *c*, which is on the opposite side of the barrier, be of a kind capable of removing the quicker passing ele-

*Fig. 6.*

ment of *a* from the under surface of *b*, as fast as it arrives there. It is immaterial how this removal be accomplished, whether by chemically uniting with it, or by mechanical action; the quick passing element, finding in its approach to the under surface of the barrier, a ready exit, continually passes off, and its place is supplied by fresh portions from above, so that in the lapse of time only the less absorbable element will be found in *a*.

33. The general conditions, therefore, of chemical decomposition by ternary arrangements, are: that one element of the compound to be decomposed, shall pass more easily through the barrier or bounding tissue, than the others, and, on its arrival at the opposite side of the barrier, it shall be rapidly removed.

34. Reasoning upon this principle, I succeeded, nearly two years ago, in effecting decompositions in this manner, which have some important physiological applications. Having taken a tube, one of the ends of which was expanded into a trumpet-shape, and closed with a thin serous membrane—peritoneum stripped from the liver—which

*Fig. 7.*

was tightly tied on with a waxed thread, while it was wet, I poured through the orifice, which was open, a strong *but clear* solution of litmus in water, to the height *a*. The tube thus situated, was placed in a wine-glass containing strong alcohol, and the level of the liquid, inside and outside, made to coincide, as in *Pl. I. fig.* 8. The conditions for decomposition were thus fulfilled, the water could find a ready passage through the serous membrane, but the colouring matter could not. Now, on arriving at the under side of the membrane, the water either was removed by uniting chemically with the alcohol, or by sinking mechanically through it to the bottom of the glass. Complete decomposition was effected, all the colouring matter being retained above the membrane, and, on placing a candle on one side of the glass and the eye on the other, dense striæ of colourless water were seen passing through the alcohol, but not a particle of the litmus escaped.

35. Under this condition those experiments which have been instituted to demonstrate the passage of colouring matter through the lacteals have been made. The lacteals do not open into an intestine with patulous mouths, but their lining membrane of serous tissue ends bluntly in a kind of cul de sac. Through such a membrane, litmus, indigo, &c. cannot penetrate, though water may find a ready passage. Hence, because we cannot colour the chyle by an injection of litmus or indigo water, it is not to be inferred that no medicine can pass from an intestine into the lymphatic system, the experiment, now detailed,

goes to prove directly the reverse, and furnishes us with an explanation of the uniformity of colour of the fluid in the chyliferous vessels.

36. An important circumstance in gaseous analysis, may here be noticed. If a tissue, in the act of transmitting gas, or ready to do so, be placed in contact with another gas, of a different nature, disturbance immediately ensues. A cubic inch of nitrogen gas, made with phosphorus, but which was found to be contaminated with $4\frac{1}{2}$ per cent. of oxygen, was agitated briskly in a vial containing about an ounce of spring water, such as has been mentioned to contain a gas $\frac{1}{3}$ oxygen. In *one minute* the nitrogen gained one per cent. by the agitation. The same quantity of nitrogen gas, agitated in a pint of water, gained no less than *eleven* per cent. of oxygen, which it had taken from the rich gas of the water. Nor is agitation or mechanical violence necessary to produce this important result. Into a bell, filled with water, and inverted into another vessel, so as not to touch it in any point, I threw 100 measures of a gas, 85 of which were oxygen. After four weeks an analysis was made, and the gas in the bell found to contain only 72 per cent. of oxygen, the remainder being nitrogen. In this way, too, in the lapse of time, from an inverted vessel, partially filled with atmospheric air, the oxygen will escape into the water, and thence into the atmosphere; and I have twice known this event to take place, so that the residue did not contain more than three or four per cent. of oxygen. In many of the most delicate researches of chemistry, we have this disturbing cause in operation, which has for the most part been overlooked. Water is universally employed in our laboratories as a means of confining gases; it enters largely into our processes of pneumatic manipulation; and though we have hitherto neglected its action, it silently disturbs all our results. An air bell cannot pass to the top of a jar without instant contamination: during its residence there it is subject to a continued succession of changes—at no two moments is it the same in composition—a perfect freedom of communication existing between it and the atmosphere.

37. As an instrument of rigid analysis, the pneumatic apparatus, so arranged, requires to be used with circumspection. It is impossible to keep oxygen, nitrogen, or any other gas in its original purity, if confined by water. This fluid, which, when reduced to a thin, imperceptible film, is instantaneously permeated by almost every substance, undergoes the like action in course of time, even in deep masses. Gases are absorbed by it, and thrown off by it in its purest state; how much more complicated then must its action be in that impure condition in which it is commonly used. Connected with this point there is another:—if a series of bells stand on a pneumatic

trough, each will affect all the others, communicating a part of its contents and receiving from them in return. A jar, containing bin-oxide of nitrogen, standing by the side of one containing common air, seriously affects it. I have noticed two common tumblers, filled with these gases, and so placed, communicate with each other so freely, that, in 17 hours, the tumbler, originally filled with atmospheric air, contained only $9\frac{3}{4}$ per cent. of oxygen. The habit of collecting gases at the same trough, that is destined to preserve others, is very exceptionable; we place the disturbing agency in circumstances the most favourable for its action. All operations of washing are liable to the same strictures.

38. We have assumed it as a LAW OF NATURE, that every or any substance, when placed in opposition with another, has a tendency to diffuse into it.

39. It is to be remarked, in reference to this, that no hypothetical cause is assumed, it is merely taken as one of those ultimate facts, which the progress of knowledge has not explained. We do not consider whether it involves the position that two bodies can exist in one place at one time, nor do we deny the impenetrability of matter. But it is required of us by a crowd of facts to admit this law, as the only legitimate position on which they can be explained. We know nothing of the size, or figure, or condition of the ultimate atoms of bodies; there are, indeed, some circumstances which would lead us to suppose that, even in the densest structures, each particle is at an immeasurable distance from those that are next around it, in comparison with its own diameter. In those interstices, which must necessarily exist, these phenomena of absorption may take place, in accordance with laws which obtain among the molecules of bodies. In the same way that a comet comes down from the regions of space, and traverses a planetary system, receiving impressions, greater or less, from each star that it passes, and emerges back again, untouched and unimpaired, so a gaseous particle may pass through the system of atoms that constitute a solid mass, and moving therein unimpeded and without contact with any of them, may emerge without change of physical condition, or only a mark, that its motion has been subject to those laws which obtain in the system through which it has gone.

40. All these observations go to establish the point, that pores of a sensible size have nothing to do with endosmosis—that it is a phenomenon depending simply on absorption. No one would aver that water possessed any apertures, or vessels, or tubular arrangement.

41. The experiment of (17) does not alone prove that endosmosis takes place through liquids and tissues whose pores have no sensible

size, it has a much more interesting application. Physiologists know that the primitive form of all organic bodies is an imperforate vesicle or globule, having the power of absorbing those substances which are around it, and decomposing them. The ultimate vesicle yields to analysis the elements of water and a few salts. It is a centre of vital activity, a laboratory assimilating things for its own substance. The simplest plants, confervæ, tremellæ, and the simplest animals, consist alone of this structure. Let us observe how nearly this vesicle agrees both in its constitution and mode of action with the vesicle of (17.) Like that, it is not only an imperforate, but also consists of the very same elements. The properties which the organized vesicle is supposed to enjoy, are met with in the fullest extent in that which is not organized. Both have powers of endosmosis and a species of assimilation of things exterior to their own substance. What property have the lowest order of animal and vegetable life which that bubble does not possess? A thing thus endowed with vitality may well excite our interest—it breathes, it is nourished, it exhales.

42. We may further remark, the vesicle of physiology is supposed to be organized, and, therefore, endowed with *life*, but what power or property does it possess which its inorganic and *dead* representative has not. The phenomena of life and vital force, which are only the aggregate of the actions of these organic elements, have obviously here no place, and it becomes an object for us to determine whether those occult and unknown and undefinable principles are really the cause of all the phenomena of this animal frame; or, whether such principles, having no existence, we are not rather to refer these phenomena to the direct agency of simple dynamic force. Is the growth of an animal or a vegetable that is referred to a principle of life, more mysterious than the growth of a crystal or the filling of a metalliferous vein? Are we, with the ancients, to suppose that the blood turns red because the lung is alive, or are we not rather to seek in the multiplied actions of the molecular force for a key to all the mystery?

43. These powers of life are only transient; beginning, however, at an unknown period, their operation continues through a vicissitude of change. In some structures it endures only for a day, in others it lasts for ages; but whether ultimately worn down and spent by a long continuance of exertion, or overcome by the action of molecular force, a period at last arrives when the whole fabric, animal or vegetable, sinks into decay. Is it only the aggregate of functions that ceases, or do the force giving atoms themselves die? Is that immortality that God has given to the chemical elements extended also to their modes of action, when in union with one another? The duration of the im-

perishable atom has not a limit, and time and circumstance leave it unchanged; at one moment it puts on the organic, at another the unorganized form; whilst its essence continues the same, all things proclaim that its functions are mortal.

44. The fabric of a membrane which shall last in a healthy condition for an unlimited period of years, is, however, of a more complex character than that here pointed out. Subject, from the state of force in which it is placed, to hourly decay, it would soon be unable to perform its appointed task, were it not continually renewed. A dead membrane, in a very short time, becomes disorganized by the passage of liquids through it, and a living one must slowly but surely decay, by the unremitting action of the same force. To accomplish this end, a complicated vascular arrangement is bestowed upon it; veins, arteries, and lymphatics freely traverse it, and to give it that sensibility which distinguishes an animal from a vegetable, a nervous net is spent upon it.

45. As yet, we do not know under what circumstances vesicles are formed. Whether or not they result from laws analogous to those which determine crystallizations. The misty vapour that rises from water, in the form which is vulgarly called steam, is perhaps the most common instance of this kind of formation. If we observe this vapour through a lens, we find that each particle is a little aqueous sac, which, by its collapse, produces a drop—perhaps, in this case, the chilling of the exterior surface of a little volume of steam, forms, by agglutination, a shell, which, by its nonconducting power, temporarily preserves the included vapour from being condensed. This shell of water, could it be secure from mechanical violence, would, without doubt, expand on exposure to certain substances, assimilate a part of them to its own structure, secrete another part into its own interior, and reject the residue; such at least is the action of a soap bubble, which is a type of all these vesicular actions. On this principle, also, we explain the formation of starch, and a variety of vegetable and animal substances. By unknown means, a little sac is formed, whose texture is of a definite kind. From the fluids to which it is exposed, this sac has the power of absorbing, and from its inner surface secreting fecula alone. These vesicular actions have a faithful representative in the action of a soap bubble.

46. The condition of chemical decomposition by ternary arrangements are such as to allow of a vast variety of results; these may depend not only on the nature of the substance exposed to decomposition, but also on the nature and structure of the barrier or bounding tissue, and likewise on the mode of the removal of the element most

disposed to pass. The animal mechanism furnishes abundant instances for illustration. Blood, which is a mixture of several substances, to supply the demands of the economy, is compelled to undergo a variety of changes. Coming along the pulmonary artery loaded with carbonic acid, it moves successively past cells inflated with atmospheric air. The structure of those cells is so arranged, that whilst carbonic acid finds no difficulty in passing in one direction, at the time that oxygen moves in the other, the nitrogen is almost entirely excluded. It only remains, therefore, to provide for the expulsion or removal of the gases accumulated in the cells; this affords an instance, where a mechanical operation is resorted to. Now, it is conceivable that the air cells might have had such a texture, as to have allowed nitrogen to pass through, and rejected oxygen. Or, other means than those merely mechanical, might have been resorted to, to effect the removal of the effete gaseous matter filling the cells. In the kidneys there is an arrangement of this kind, the urine being thrown into the ureter by the direct action of the walls of the tubuli uriniferi, the mechanical force of muscular contraction being afterwards exerted to remove it from the bladder, where it collects. The motion also of the bile, in the ramifications of the biliary ducts, (pori biliarii,) and probably the phenomena of the portal circulation depend on this tissue action. Nor is it a force incompetent to perform all that the animal mechanism demands, the action of a similar membrane is able in the case of vegetable life, to throw up sap under a pressure of not less than three atmospheres.

47. Haller remarked, that if ever the secret of glandular action was discovered it would probably first occur in the case of the kidneys. The specific action which he assumed, as a property of every secreting organ, has much light thrown upon it by what we now know to be effected when change of structure takes place in an acting tissue. Thus, the leading experiment of Dutrochet, of the endosmosis of water into alcohol, will take place through almost any animal membrane, but a thin lamina of gum elastic, though not one-tenth the thickness of such membranes, and even more transparent, entirely prevents the occurrence of any such phenomenon. Now, it has happened, in the case of the lungs, that the general progress of science has taught us, under what condition venous blood was brought into their structure, what it gave off, and what it received in passing the air cells, and what is the constitutional difference between it and arterial blood. We know that carbonic acid is contained in the venous blood, and oxygen in the arterial; we also know how this change is brought about; but not so with the liver or the kidneys. Would the

mixture of the blood of the emulgent veins, with a due quantity of urine, produce aortic blood, or blood like that of the emulgent arteries? Certainly, it should follow, if glandular action is explicable on these principles of absorption.

48. To determine the condition of the blood, in all the great venous trunks, is a problem of the utmost importance, in giving an explanation of secerning action. The blood of the splenic veins cannot be the same as that coming from the extremity in the saphena; the same applies to emulgent and mesenteric blood; yet, after this visceral blood has gone through the liver, and got into the ascending cava, we have no reason to suppose it is different from that in the descending cava; this remarkable change has, therefore, been impressed upon it during its portal circulation. There are many facts which would tend to show that the primary action of the liver is to accomplish this end, to bring the visceral blood to the same chemical constitution as that coming from the extremities, and, therefore, fit it for the subsequent arterializing action of the lungs.

49. There are some curious physical phenomena which will occur in repeating these experiments, on the action of thin films, in relation to the colours they assume, especially when acted on by ammoniacal gas. It has been remarked, that a very minute soap bubble, the diameter of which does not exceed a quarter of an inch, as soon as it is immersed in an atmosphere of ammonia, becomes dyed with the richest colours; on taking it out from that atmosphere and exposing it to the free air it loses its colour and again becomes white. Bubbles of a larger class, as those of more than two inches in diameter, exhibit also a surprising permanency of tint; above there may be a blush of pink, and on the under part a fair green; and this will continue for a long time without any kind of change. It may be proper to add, that, during the action of absorption, these bubbles exert no action on a beam of polarized light.

50. By referring the phenomenon of endosmosis to absorption, such as has been recognised by chemists, we advance one point in the simplification of our knowledge. It gives us also a better idea of the specific action of tissues, as depending on structural arrangement, and presents an intricate problem in its easiest form for solution; moreover, it is, as I know by experience, a safe guide in experimental research. We can hardly doubt that the forces bringing about the result indicated in (25) are the same as those which operate in Dr. Mitchell's experiment, where India rubber is used as a barrier; and if that result receives so ample and so easy an explanation upon this doctrine, why should we hesitate to apply it to the other. But the

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composition, structure, and habitudes of a thin, watery film, are much better known than those of a lamina of India rubber,—we can reason with certainty respecting the one, and vary its composition to suit the purposes of experiment; the other affords no such advantage. If, however, it should eventually be found that the simple doctrine of absorption is not sufficient to explain all the phenomena of endosmosis that may hereafter be discovered, this paper will at least prove, that the cause of those phenomena are not alone enjoyed by *organic* and *solid* tissues, but also by *liquids* and *substances without organization.*

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ART. II. *Cases, with Remarks.* By ASHBEL SMITH, M. D., of Salisbury, N. Carolina.

CASE I.—*Fungus Hæmatodes of the Eye—Extirpation—Not the slightest return of the disease since the operation, which was performed upwards of twelve months ago.*—York, a servant belonging to J. M. Roberts, Esq. was sent to me to be operated on for fungus hæmatodes of the right eye; of whom his master wrote me the following account:—"When York was *six months* old, a *white speck* first appeared in the sight of the eye, and continued gradually increasing and spreading, from that period until the last time I saw him. He is now ten years old. As to the family of York, he is the only one that has ever been attacked with a cancer, as far as I can learn." The patient arrived Oct. 16, 1834, and I operated the 7th of the following month. During this interval, a period of about three weeks, the tumour increased noticeably, and was at times very painful, especially at night. At the date of the operation, its circumference measured nine inches, embracing the eyelids, and it projected about one inch in front of the superciliary ridge. By its pressure, the whole of the right side of the face and nose was apparently enlarged and distorted. The tumour, externally, was tolerably smooth and irregularly hemispherical: its surface was very vascular, of a darkish red colour, here and there interspersed with a few paler, and other nearly livid spots; a small thin scab, with a little muco-purulent matter, commonly rested on the most exposed portions of it; it was peculiarly soft and elastic to the feel, especially at one point on its upper limb, where it gave to the finger the sensation of a fluid, covered only by a thin membrane: according to the patient, it was subject to bleed occasionally, though it did not appear to me extremely prone to take on

hæmorrhagic action: it was painful on being handled, and the patient sometimes (chiefly at night) complained, when no external cause had approached it. The eyelids were excessively stretched and covered about one-half the surface of the fungus, which projected between them: they were free from disease, except that the glands of Meibomius furnished a secretion rather more abundant and viscid than in their perfectly healthy condition. A few tears occasionally ran down over the cheek, whence I concluded the lachrymal gland was not greatly diseased. There was no trace visible of the original structure of the globe of the eye, except of the conjunctiva reflected from the upper lid over a small portion of the fungus. A single lymphatic gland lying on the parotid of the right side, somewhat tumefied, and painful on being handled, was the only glandular enlargement I discovered, unless I include a slight puffiness of the parotid itself. The skin, for a considerable extent about the tumour, had the peculiar discoloration of the cancerous cachexy strongly marked. The general health of the patient was tolerably good; he is sufficiently intelligent for his age and condition, and was anxious for the operation to be performed.

*Nov. 7th,* 1834.—The fungus was extirpated in the usual manner. After preparation, by attention to the diet and bowels for some days previously, the patient was firmly confined on his back, with his head somewhat elevated and supported by Dr. B. The lids were freely divided at their external and internal commissures, and dissected off from the tumour. On attempting to dissect the fungus from its adhesions to the edge of the orbit, there was a *furious* hæmorrhage. Immediately thereupon, a very narrow, curved, probe-pointed bistoury was introduced at the inner canthus, deep into the orbit, and in contact with the orbitar plate of the ethmoid bone, and thence carried along the floor of the orbit to the outer canthus, Dr. B. meanwhile elevating the tumour with his fingers,—the incision was thence continued along the upper portion of the orbit, while the tumour was depressed, to the point where the knife was introduced. A slight adhesion, consisting mostly of the optic nerve, was readily divided. The removal of a small portion or two of the tumour and of the lachrymal gland left the orbit clear of every thing but its periosteum. The profuse hæmorrhage ceased in a good degree on the separation of the fungus; but the ophthalmic artery and some twigs near the nose still bled pretty freely; they were readily checked by torsion and compression for a few minutes. The socket was filled with lint, impacted with moderate firmness, and covered with a bandage, and the

patient put in bed. The next day he was permitted to walk about the house.

The subsequent treatment consisted in the occasional use of a saline purgative, and in restricting the patient to a vegetable diet for the five months that he remained at my house. I confined him to the use of *corn-bread* and *water, alone,* forbidding even all preparations of wheat, as far as was practicable. The only local application was filling the socket with dry lint, so as to make moderately firm compression on its parietes. Healthy granulations formed, and the orbit was filled very gradually, nearly to a level with its border, when the reparative process ceased. The lids contracted, slowly, to nearly their normal dimensions, and closed the aperture. The divisions of their commissures healed evenly, without any suture having been employed. No unhealthy granulations or fungous sprouting occurred to interrupt the cure. A letter from Col. Roberts, dated Nov. 22, 1835, upwards of a year after the operation, says:—"York is well, and has been so since he left you. His eye has the appearance of continuing well, and he (i. e. York) says he receives no pain whatever from it."

I am disposed to attribute no inconsiderable influence on the successful progress of this case to the moderate compression exerted by the dressings upon the granulating surfaces of the wound. Mr. Lawrence used to disapprove of filling the socket with lint, &c., an opinion which appears to me quite untenable, since the researches of Recamier have shown the effects of compression, not only in retarding, but even in curing morbid growths. Much, also, I think, is to be assigned to his diet, which was almost entirely of corn-bread and mush. Of the salutary effects of Indian corn,* as a constant article of food, I entertain at the present time a high opinion; whether a more extended observation will confirm it, I do not know.

An incision was made into the tumour after its removal. It was a tolerably firm substance, of a reddish colour, and presented no traces of the normal tissues of the eye, except the sclerotic coat, which was crowded to one side, and lying between the tumour and the adjacent

*The mention of Indian corn, leads me to state here a circumstance, not indeed connected with the present case, but of considerable interest, if I am right in my conjecture as to its cause. Calculous affections are of not unfrequent occurrence among the whites in this section of country. But, neither have I nor my medical brethren here, of whom I have made inquiry, known a case of calculus of the bladder in a negro in these parts. Indian corn is the almost universal bread-stuff on the plantations, together with a liberal allowance of meat, chiefly bacon, and game, as is used by their masters. Is this exemption from calculous disease attributable to their general use of Indian corn?

loose cellular membrane. The tumour contained a considerable quantity of fluid blood, and in its structure consisted of that vascular or fibro-vascular network, denominated *accidental erectile tissue*, or *fungus hæmatodes*, strictly speaking. The blood was washed, without much difficulty, out of the surfaces of the incision, which then assumed a dirty pearl colour, with a slightly reddish tinge, and exhibited, generally, the appearance of areolar tissue. Some portions, however, were more dense than others, so as to give the whole an irregularly striated appearance. The striæ or denser portions resemble what Laennec has rather incorrectly denominated *crude encephaloid tissue*.

So generally has fungus hæmatodes been regarded as connected essentially with some constitutional taint, and as almost certain to break out afresh after the removal of the local disease, that even in the few cases of alleged complete recovery after an operation, a doubt has arisen, whether the operators might not have been mistaken as to the nature of the tumours. For this reason, I have used especial pains to determine the real character of the tumour in the case I have related. Dr. J. Burns, who has witnessed undoubted cases of fungus hæmatodes terminating fatally, Dr. Lueco Mitchell, an excellent and experienced surgeon, and others, were clear as to the hæmatodal nature of the tumour; and my own observation in this disease, which has not been limited, left me in no doubt on this point previously to the operation. And this opinion was confirmed by the subsequent examination of the tumour, if the doctrines advanced by Andral, Velpeau, and others on the nature and pathology of fungus hæmatodes be correct. It may not, however, be amiss to observe here, that the substitution of the term *medullary* fungus for that of fungus *hæmatodes*, by several authors, seems to imply, that they regard as an *essential* characteristic of this disease, the presence of *softened encephaloid matter*, a substance which did not exist in any considerable masses, if at all, in the fungus I extirpated. On a late examination of this tumour, which has been preserved in alcohol, I obtained several particles of a moderately firm cerebriform consistence, varying in size from the head of a pin to very small shot. I believe, however, they were only fibrinous coagula deprived of colouring matter.

In the case above related, the disease commenced within the globe of the eye, after the usual manner of fungus hæmatodes of this organ as described by Scarpa and others; it subsequently presented the symptoms and external appearances with the circumstances of age, &c. so commonly observed in this affection; it was clearly of a malignant character; that is, instead of disappearing or remaining indolent, it showed a decided tendency to invade the surrounding tissues, and

eventually to destroy life. Will the presence or absence of cerebriform matter assist us in our prognosis after an operation in this disease?

According to most writers on this disease, "the morbid growth itself has, in almost every instance, the appearance of medullary matter;" (Frick;) but those pathological views which refer "all the morbid appearances to the effects of a *medullary* growth from the optic nerve" (Mackenzie) to a sort of hypertrophy of the nervous tissue, as I understand the expression, seem to me very defective and quite incorrect. (After a few quotations,) I will briefly relate another case, which appears to me to throw some light on the nature of erectile and medullary tumours; and the changes which take place in their anatomical elements.

Velpeau (Med. Operatoire I. 783, on Extirpation of the Eye) remarks: " * * * *fungus hæmatodes*, a mixture of encephaloid, erectile, colloid, melanic tissues, or one of these substances, *alone*, almost always forms the disease."

Weller, a pupil of Beer, who treated of this disease under the name of *fungus medullaris retinæ*, relates a fatal case, (Diseases of the Eyes, vol. ii. 286-7 of French translation,) very similar in appearance, &c. to that of York. " * * The retina appeared at the bottom of the eye, like a concave plate, of silver. The eye was sightless, but indolent, and the patient, in other respects, in good health. * * * About three months before the death of the patient, this eye, which had been some time sensible, *rapidly increased in volume, projected between the eyelids, under the formæ*, of a *red mass, and finally acquired the size of a large apple.*" * * "An incision into the tumour after death, showed it to consist of a *firm fibro-vascular mass*, in which were no traces of the primitive organization of the parts," &c.

I have cited the *obiter dictum* of Velpeau, an accurate medical *litterateur*, and some points of the case related by Weller, without attaching an importance to them, except showing that cerebriform matter is not considered an essential constituent of hæmatodal tumours of the eye. But it is to Andral that we are indebted for the most sound, philosophical, and comprehensive views on morbid growths, in the present state of science.

The most obvious, and, at first blush, the most philosophical classification of tumours, would be one founded on their anatomical structure. But its defectiveness appears, when we find the same pathological process operating a variety of changes in the component parts of a morbid growth, with only a slight diversity in the symptoms, external appearances, or termination of the disease. The erectile, the scirrhous, the soft encephaloid tissues co-exist in the same tumour, which is

named after that tissue which predominates. Is the nature of the tumour changed, if, as frequently happens, it becomes mostly a mere mass of cerebriform matter?

"We might," says Andral, "multiply at will the number of species of these morbid productions, if to every variety of appearance it be deemed necessary to give a particular name. Laennec has done this, for one, in calling it encephaloid matter. But this creation of species, is, in my opinion, unphilosophical and useless to science. Of what importance are appearances here? That which is important, is to know, that, notwithstanding the diversity of appearances of these productions, they are all identically of the same nature, &c. *Precis d'Anatomie Pathologique*, i. 385. He regards the scirrhous and encephaloid tissues "as merely shades of the same morbid alteration, to wit, hypertrophy of the cellular tissue, existing either alone or united with some product of morbid secretion in the laminæ of this tissue." *Ibid*, i. 168. Fungus hæmatodes is a generic term, including several anatomical elements. "In the interior of this vascular development, (fungus hæmatodes or accidental erectile tissue,) other lesions of nutrition or secretion may take place. Thus, in more than one fungus hæmatodes, together with the very remarkable vascular network which constituted their basis, there have been found divers morbid productions, fibrous masses, scirrhus, pus, melanose matter," &c. *Ibid*, i. 178, 499.

As connected with this subject, I subjoin the following case of a malignant growth in a female breast:

Case II. *Malignant Tumour of the Breast.*—I have before me a malignant tumour in a female breast, which I amputated a few weeks since. The tumour is supposed to have been occasioned by a slight bruise, upwards of a year ago; it was seated above and a little to the outside of the nipple; quite prominent, and somewhat larger than a hen's egg. When I first saw it, seven weeks before its removal, it was painful, of a darkish red colour, with the soft, elastic feel, common to erectile tumours, giving under the finger the sensation of a fluid, so distinctly, that a physician of much practice had lanced it, in expectation of finding matter; blood only flowed. The accidental abrasion of the skin on its surface to a considerable extent, about two weeks after I first saw it, exposed a surface which bled easily and freely, and which, on close examination, appeared to me to be accidental erectile tissue, quite similar to the fungus of York. Subsequently, small pimples, about the size of a pin's head, of a dirty yellowish-white colour, resembling pimples of the face when mature, appeared over the surface of the tumour. The patient, on picking some of them open, got a small quantity of hard curdy matter. These pimples did not disappear, but increased, though very slowly, and

new ones made their appearance. About the same period, the tumour, which had not increased in bulk noticeably, was gradually losing its soft elastic feel; and, at the time of its removal, some parts had acquired a scirrhous hardness. The appearance and increase of these pimples were synchronous with the commencing and increasing hardness of the tumour. Ulceration was just commencing when I amputated the breast. The tumour consisted of erectile tissue, tissu lardacé or scirrhous tissue, and *soft encephaloid* or *medullary* matter. The pimples were the extremities of masses of the *medullary matter*, which constituted about half of the entire tumour. The tissue *lardacé* was arranged in *striæ*. I could discover no difference between the portions of the erectile tissue in this tumour and that of the eye described above.

At the time I first saw this tumour, it consisted, I believe, almost wholly of erectile tissue. This, in parts, gave place to, or was converted into scirrhous or crude encephaloid tissue of Laennec, about the same time that a deposition of cerebriform or encephaloid matter, rightly so called, was going on. It may be observed that the encephaloid matter existed as a foreign body in the tumour; for the ulcerative process rapidly succeeded on its deposition, thus completing the last step to the tumour's becoming an open cancer.

The changes that occurred in the principal anatomical elements of this morbid growth, after it came under my inspection, were to me satisfactorily ascertained. Whether it be more philosophical to consider the tumour as being of the same nature in its different states, or to regard the deposition of the medullary matter and the consequent incipient ulceration as operating a change in its nature, I will not venture to determine.

*Salisbury, N. C.*

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ART. III. *Case of apparent Fallopian Menstrual Secretion.* By F. W. ADAMS, M. D., of Montpelier, Vermont.

Pathological facts, characterized by novelty and accuracy, are never valueless; nor can they fail to excite an intense interest with the ardent inquirer, whenever they are adapted to the illustration of disputed or undiscovered principles of functional phenomena.

However familiar the phenomena of the following case may be to others, to me they possess, at least, the interest of novelty, and, in

that character, I would present them as not altogether unworthy the consideration of those who are delighted with medical research.

Mrs. M. L. E., aged 38 years, came under my observation in the spring of 1834, a few months antecedent to her decease. She presents a form of more than ordinary physical delicacy; great emaciation; literal extinction of muscular strength; general morbid increase of nervous irritability. She experiences constant sense of fulness, weight and excruciating pain, when not under the influence of an anodyne, uniformly referred to the inferior lumbar and pelvic regions; general loss of appetite, with constipation and slight tumefaction and tenderness of the abdomen; frequent faintness, nausea, and occasional vomiting; her tongue is dry, and moderately furred; pulse small, hard, and frequent; head inclined to dizziness, intellect undisturbed; uterus sensibly enlarged, hard and uniform to the feel, neck and os tincæ apparently obliterated, sensibility moderate; with a vaginal excess; catamenia have been absent during more than nine preceding years, with a troublesome chlorosis during most of the same period.

The following comprises all the previous history of the case which I have been enabled to obtain. Constitution naturally delicate, health feeble and vacillating from birth to puberty, after which, though strongly marked by instability, it was somewhat improved to the age of twenty-nine, at which period occurred the birth of her second and last child. Delivery was immediately succeeded by all the usual phenomena of acute hysteritis in its aggravated form, from which recovery was exceedingly slow and imperfect. Her health, however, after the lapse of several months, so far improved, as to enable her to resume moderately and intermittingly her domestic employments, which were continued with greater or less embarrassment until within about two years of her death.

A few months subsequently to the commencement of convalescence, and whilst a slowly progressive amendment seemed to promise the re-establishment of former health, a recurrence of the symptoms of menstruation appeared to confirm the accuracy of a favourable prognosis. The nonappearance of menstrual secretion, however, suggested a doubt of their normal character, and yet their semblance, succession, and periodicity appeared to identify them so unequivocally with those of health, that artificial means were promptly and confidently adopted for the assistance of nature in her ineffectual efforts to re-establish the desirable phenomenon of menstruation.

The effects of these prescriptions were, however, so evidently injurious that they were finally abandoned.

Various treatment, both regular and empirical, mostly, however, calculated to increase nervous irritability and vascular excitement, was subsequently adopted and rejected, until at length patience being exhausted by unpropitious trials, opium was ultimately resorted to, and with advantage to the patient.

During this period, which included several years, the paroxysms denoting a uterine effort, though constantly increasing in intensity, were not only strictly periodical, but for a long time preserved a uniformity of interval identical with that of normal menstruation.

At length, however, those intervals were distinctly shortened, so that, by the termination of half a dozen years, they had gradually exchanged their monthly for a semi-monthly type, becoming meanwhile strongly inclined to relinquish the uniformity which had hitherto characterized them. The paroxysms, likewise, became not only variable, occupying in their progress all the intermediate periods, from four or five to eight or ten days, until finally, as I before remarked, they became a continuous series of excruciating distress, when not alleviated by full doses of opium, or some other narcotic.

Having arrived at the period at which I was first introduced to the patient, I will not suppress an acknowledgment of my surprise at the extremely anomalous character of the case as presented by its phases and history.

Among the complicated phenomena indicative of functional and organic derangement, those of apparent uterine irritation had uniformly predominated; and yet, whatever secretion had occurred from the vagina, though its appearance might not unfrequently have nearly justified its being mistaken for a purulent uterine production, was, nevertheless, exclusively chlorotic; nor was there present either acute sensibility, dilatation, tumefaction, or inequality of the os uteri to induce a belief that this part was affected with carcinoma.

Henceforward, the patient was kept as comfortable as opium, hyosciamus, cicuta, and occasional laxatives could render her, until near the first of October, 1834, at which time her death occurred, under the following very peculiar circumstances. About a week previous to her death, a sense of sudden rupture in the left lumbar region, connected with that of the descent of a liquid into the lower part of the pelvis, produced in the patient an alarm, which, aggravated by extreme distress, was nearly equivalent to the sudden extinction of life.

The left labium pudendi was immediately formed into a dark purple tumour, considerably exceeding the size of a goose-egg, attended with extreme pain and anxiety. This was punctured within a few hours of its appearance, and afforded, perhaps, half or two-thirds of a

pint of semi-viscid, uncoagulable, peculiarly and offensively odorous, purplish-black or tar-coloured, homogeneous liquid, which, in all its visible qualities, presented a perfect similarity to menstrual fluid, which has been long retained by an imperforate vagina.

In the course of the second day, the puncture having closed, the tumour reappeared, presenting its former character, save the diminished quantity of its discharge.

The supervention of acute peritonitis was recognised only by moderately increased tenderness and tumefaction of the abdomen, the countenance having been, from the moment of exacerbation, entirely cadaverous, and the pulse scarcely perceptible, during the few days previous to life becoming extinct.

After much importunity, amply justified by the peculiarities of the case, the consent of the husband was obtained to a partial autopsy of the parts supposed to be the seat of the disease. These presented, on exposure, the following abnormal appearances: Pelvic and inferior part of the abdominal cavities, with their contained organs, stained, nearly the colour of impure molasses, evidently by suffusion of the before-mentioned liquid, a quantity of which was yet remaining in all the lesser excavations of those cavities, and in a ruptured sac which had, doubtless, afforded the material of the pudendal tumour. This sac, which, unruptured, might have contained a pint or more, occupied the site of the left fallopian tube, being attached to the body of the uterus by its internal extremity, whilst its external appeared loose in the abdomen.

On the right side, corresponding in situation and character with the one already mentioned, was an unruptured sac, presenting itself in the form of an oblong curved, pyramidal, dark-purple tumour, with its base floating at the ilium, and its apex attached to the uterus, containing at least two-thirds of a pint of liquid, in all respects identical with that previously evacuated from the labium pudendi. The uterus was about the size of an adult fist, nearly globular; neck extinct; structure slightly abnormal, being somewhat paler and harder, and offering a less leathery resistance to the scalpel than the healthy, unimpregnated organ, with an obliteration of its former cavity, from an amalgamation of its parietes, so complete as not to present even a cicatrix to denote the fact or situation of its previous existence; left ovarium unrecognised, and right nearly obliterated; numerous marks of gangrene upon the intestinal peritoneum; little or no lymphatic or serous effusion or superficial adhesions; thickness of parietes of right sac somewhat greater than of the left, and in both much exceeding their natural state. The foregoing is the result of the very partial examination

to which I was permitted, and which appears amply to have developed the character of the case.

I am aware that very great enlargement of the fallopian tubes from extra-uterine embryotic lodgment, perhaps much exceeding that of the present instance, has too frequently recurred to continue a subject of surprise, nor would I present the obliteration of the uterine cavity as altogether unique; but I am ignorant of any other example of their concurrence in the same case.

That cases similar to the above have never been noticed by others, is not to be inferred from their description having either evaded my observation, escaped my recollection, or been withheld from publication, yet an opinion of their infrequency is, doubtless, justified by the poverty of our records upon this subject. In respect, therefore, to the lining membrane of the fallopian tubes having assumed the secretory function of that of the uterus, the case under consideration, whose characteristics were too palpable to have been overlooked or mistaken, may claim to be novel, with the mass of the profession at least. That the sacs above described, were constituted of the fallopian tubes, scepticism could have found no excuse to doubt; and that their contents were a secretion from their lining membrane, substituted for, and possessing the characteristics of the menstrual fluid, seems the only conclusion deducible from the premises which anatomical facts or physiological principles can justify.

In this case we are presented with acute uterine inflammation, productive of erosion of its mucous tissue and subsequent adhesion, extending its depredations, however, little further than the secreting surface.

Notwithstanding menstrual secretion may have been organically and exclusively assigned to the uterine-mucous membrane, yet it is not incompatible with the aptitude of nature to adopt expedients in cases of emergency, that this membrane having been obliterated in the progress of disease, the nearest in analogy should hence become its functional substitute, which, undoubtedly, is the lining membrane of the fallopian tubes.

This, therefore, with all its peculiarities is only one of the numerous instances already recognised, in which nature has substituted in the animal economy one organ for another, by modification or development of function.

When contemplated in an isolated condition, this case may seem to promise but little pathologically to the improvement of medical philosophy, on account of its apparently inevitable fatality. Yet, while analogy shall be associated with the rules of reflection, cases of no

more magnitude than the present may perhaps deserve a place amongst the records of professional facts, to which subsequent reference can be conveniently made, and with which future occurrences may be usefully compared.

My object being, however, fully accomplished in its simple presentation, I will refrain from further intrusion of my own conceits of the case, leaving it and its legitimate suggestions with the medical public.

*Montpelier, Vt.*, Feb. 1836.

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ART. IV. *Case of Inguinal Aneurism, in which the Right External Iliac Artery was successfully tied.* By WM. H. RUAN, M. D., of St. Croix, West Indies.

*St. Croix, June 19th*, 1835.—Lucas Dogherty, (mulatto,) æt. 48 years, belonging to Gen. Von Söbötker, of spare habit of body, and of a bilious, melancholic temperament, observed about five weeks ago, a small pulsating tumour high up in the right groin, which rapidly increased in size, and brought on swelling of the whole limb of that side, accompanied by severe lancinating pains proceeding in a spiral direction down the thigh, and into the leg and foot. This tumour was supposed by the patient to be an abscess forming in the groin, and treated by him with hot poultices and fomentations. In order to relieve the swelling and lancinating pains of the thigh and leg, he had applied several blisters, at different times, to the limb. Having experienced no relief, he requested, about a week ago, to see me. I visited him, accordingly, and found a large aneurismal tumour in the right groin, immediately below Poupart's ligament, pulsating furiously over an extensive surface, which, when the hand was applied over it, communicated a peculiar whizzing sensation. The whole limb was much swollen, with considerable venous congestion. The tumour could be handled freely, without occasioning much uneasiness to the patient; and its pulsations could be stopped by pressing firmly on the artery, immediately above Poupart's ligament.

The patient has laboured under bilious attacks frequently; the last about six months ago, when he was completely jaundiced. Until within the last twelve months, he has been subject to frequent attacks of gout.

On my first visit I directed cold applications to be made to the tumour and whole of the limb, with the occasional use of purgatives,

so as to procure three or four evacuations daily. On the 17th, I saw him for the second time, along with Dr. Jacobs, and found him much in the same condition as at first, with the exception that there was less venous congestion of the limb, and that the tumour appeared to elevate Poupart's ligament considerably. Having explained to the patient the hopelessness of his case, if left to itself, or if treated in any other way than by an operation, he consented to undergo the latter. As he appeared somewhat weaker than at my former visit, we directed him to cease the use of purgatives, to continue the cold applications to the limb, and to take more animal food.

I saw him, for the third time, to-day, (June 19th.) His strength, he thinks, is somewhat restored, and he is anxious to submit to the operation. I measured the dimensions of the limb, by passing a piece of twine around it, over the tumour, and above the trochanter major; and, on comparing this measurement with a similar one of the healthy thigh, I found a difference of exactly five inches.

*June 21st*, 1835.—Assisted by Dr. Jacobs, and in the presence of Drs. Roebuck and J. Von Bretton, I this day performed the operation of passing a ligature around the right external iliac artery. I made the first incision through the skin and subcutaneous cellular substance, commencing about one inch above the superior anterior spinous process of the ilium and an inch and a half on the inside of it, carrying it down with a very slight curve to the right of the patient, and terminating above the upper edge of Poupart's ligament at about half an inch on the outside of the course of the artery; thus making a cut of about three inches in length. The tendon of the external oblique muscle being next divided through the length of the first incision, the fibres of the internal oblique muscle were exposed. These were partially divided at the lower portion of the incision by the knife, and pushed upwards by the finger. I next inserted my finger between the peritoneum and superincumbent transversus abdominis muscle and the remaining fibres of the internal oblique, and with a curved bistoury divided these upwards. By pushing the peritoneum upwards, I readily felt the external iliac artery beating strongly. I experienced some difficulty in separating the fibres of the fascia propria of the vessels, so as to disengage a portion of the artery from the continuous vein; but by a little perseverance with the nails of my fore fingers and the handle of a scalpel, I accomplished it; and, with an ordinary aneurismal needle, I then passed a strong ligature around it, and tied it firmly. The pulsation of the tumour, of course, immediately stopped. The ligature consisted of a strong lint thread, doubled and waxed; and was passed under the artery from the out to the inside of

it; this mode being found, in the present case, to be the most easy. Care had been taken, during the operation, to disturb the peritoneum as little as possible. No small arteries bled, and the patient did not lose more than a couple of table-spoonsful of blood from a small superficial venous twig which had been wounded, and which retracted and ceased to bleed on being entirely cut across.

The ligature was allowed to hang out at the lower end of the wound, the edges of which were kept together by a single stitch and two strips of adhesive plaster. Finally, a firm compress and bandage were applied.

The temperature of the limb rose, immediately after the operation, considerably above that of the opposite side. My prescriptions were a diet of animal food principally, two glasses of wine in the course of the afternoon, and applications of bottles of warm water on each side of the limb through its whole length, and to the sole of the foot.

*June 22nd.*—The patient has slept well. He says that he enjoyed more refreshing sleep in the course of last night than he had done during the whole of the preceding week. Pulse 108, but soft and natural in other respects. Has been entirely free from pain in the limb and everywhere else. The sensation of the limb does not appear to be diminished; its temperature is considerably higher than that of any other part of his body. Bowels have been confined during two days. Continue the same diet, and warm applications to the limb; and procure one or two stools by means of laxative injections.

It would be too tedious and unprofitable a task to repeat here all the reports of the case which I have entered in my note-book. I shall, therefore, more concisely state, that my patient continued to do well. On the 24th of June he had two large evacuations of blood from hæmorrhoids, an attack to which he has been subject for many years at this season of each year. The aneurismal tumour gradually diminished; the pulse soon came down to the natural standard; the temperature of the limb became the same as that of the other parts of the body; and on the twenty-fourth day after the operation, the ligature came away very easily. At the first dressing of the wound, it was found healed throughout its two upper thirds. About two drachms of healthy pus were discharged daily from its lower third, until it finally healed up entirely.

On the 10th of October last I met my patient walking about on the estate where he lives. He informed me that for some weeks past there had not existed the slightest remnant of the tumour in his right groin; that the limb of that side had long since acquired an equal

degree of strength with that of the opposite side, and that he had been working at his trade (that of a saddler) for upwards of a month.

*St. Croix*, January, 1836.

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ART. V. *Remarkable instance of a Brass Nail remaining in the Lungs more than a year.* By AMARIAH BRIGHAM, M. D.

Miss A. Lyman, aged five years, while playing at school, in May, 1823, was suddenly seized with violent and convulsive coughing and vomiting, supposed to be caused by swallowing, with great difficulty, some large substance. On recovering sufficiently to talk, she stated, that, at the time she was seized with coughing, she had a brass nail, such as is used in covering trunks, in her mouth, that it got into her throat, but that she had actually swallowed it, she could not say. The late Dr. Cogswell, of this city, saw her immediately, and advised a dose of castor oil. The cough continued severe for a few days, and then greatly subsided, and her friends and physician were of the opinion that it originated from the irritation excited by the nail passing the œsophagus.

Nine months after this occurrence she went into the country. I then saw her, for the first time, and, though she had some cough, her health was tolerably good, as she was able to attend school.

In May, 1824, one year from the time of the occurrence at school, she apparently took cold, which was speedily followed by increased cough, expectoration, and hæmoptysis. Hectic fever, night sweats, and the usual symptoms witnessed in the last stage of phthisis pulmonalis soon ensued. As she was of slender form, and her mother had died of consumption soon after the birth of this child, I supposed this was her complaint. She died June 1st, 1824. At the request of her friends, who had a desire to know if the nail caused her disease, in company with Dr. Stone of Enfield, Massachusetts, I examined the body. The trachea appeared healthy and also the lungs on the left side, but, on tracing the branch of wind-pipe that passed to the right lung, the lining membrane was found somewhat inflamed, and at the fourth or fifth division of the right bronchial tube, more than one inch from the bifurcation of the trachea, was found a common brass nail, half an inch long, with a head nearly the same in diameter. It was coloured black, but not in the least corroded, and appeared to be firmly fixed at one of the divisions of the bronchi. As there was no channel from the nail to any other part of the lungs, it had not probably changed its place.

There was some distension of the blood-vessels around it, but not so much apparent disorder immediately where the nail was found, as in the substance or rather the outer parts of the right lung, which adhered extensively to the adjacent parts, and contained several large abscesses that discharged pus into the bronchi by fistulous passages.

I know of but few cases on record where so large a substance had passed into the lungs and remained so long a time without proving fatal. My greatest surprise, however, is, that such a substance was enabled to pass so far into the lungs of a child but five years old. After it had passed to where it was found, the left lung remaining unaffected and a portion of the right also, respiration could, of course, be maintained without great difficulty.

M. Sue relates the case of a girl eight years of age, who, in swallowing a piece of pigeon, became affected with cough, and in a manner as if something had passed into the trachea. Eighteen years and six months after this, in a paroxysm of violent coughing, she expectorated a piece of pigeon bone. She died, however, of consumption, one year after this. M. Broussais has published a case of chronic pneumonia, caused by a ball which remained in the lungs for seven years. M. Louis mentions a case of a merchant in whose trachea, at the origin of the bronchia, a piece of gold remained fixed for four years, without causing much inconvenience, except when he was in a horizontal posture. It finally produced ulceration, and the patient died of phthisis. Dupuytren saw a similar case.

*Hartford, Ct.*, January 1, 1836.

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ART. VI. *Clinical Report of Cases treated in the Marine Hospital, Charleston, S. C.* By W. G. RAMSAY, M. D.

Clinical reports of hospital cases, where the history and treatment of the different diseases are faithfully detailed, have always been viewed as interesting and instructive. Having charge of the Marine Hospital lately erected in this city, I propose to give reports of some of the most interesting cases from my note book.

The Charleston Marine Hospital was built by the United States government, in 1832. It is a commodious and airy building, fronting the west, and has double piazzas to the north, south and west, which are appropriated to the use of the patients. The front part of the building is occupied by the steward and his family. There are eight wards—three on the first floor, for surgical cases, and five on the

second floor, one for venereal cases and four for medical cases. This institution is exclusively for seamen, both American and foreign; the former are admitted by the collector of the port, who pays into the city treasury sixty cents per day for each seaman, who has a protection, which proves that he has paid to the government hospital money. No American seaman is allowed to remain longer than four months in this institution; they are then considered as chronic cases, and must be sent by the collector to their native place. Foreign seamen are admitted by the Commissioners of the institution, with the captain of the vessel or the consul as security for the payment of their board in the hospital, which is seventy-five cents per day. The wards of this institution are open to all students of medicine visiting the city for instruction. Having derived much advantage from the clinical instruction in the Alms-house and Hospital in Philadelphia, it has been my endeavour to render this institution a source of instruction to students prosecuting their studies in this city. For the attainment of this end, there are clinical lectures delivered every Wednesday and Saturday mornings during the session of the colleges. The students are also allowed to visit with the physician every morning, if they wish. A note-book is kept, in which is accurately recorded a minute account of the history, treatment, and post mortem appearances of all cases of importance, to which all the students have access. It is to be regretted that this branch of medical instruction was formerly so much neglected. We now fully appreciate its great importance and value. Young men are generally under the erroneous idea that they can learn all that is necessary by reading works on the practice of medicine, without ever observing or studying diseases at the bed side. Here they may learn, without much effort of memory, the many changes which the system undergoes when under the influence of disease. A hospital may truly be said to be the best "text book" to the student. It is the book of nature, which is always open before him, and from which he can draw more valuable and lasting information than by spending his life in studying the elaborate works and routine practice of *great names.*

Case I. *Concussion of the brain.*—John Dixon, Englishman, aged 19 years, admitted into the Marine Hospital on the morning of the 7th January, 1835. Fell the night before, in a fit of intoxication, from the forecastle into the hold, about fifteen feet. He was taken up next morning insensible, and brought to the hospital in the following condition: intellect impaired; sensible to touch; pupils not much dilated; pulse small, 72; surface warm; ecchymosis and tumefaction of the right eye; contusion of the right side of the head. ℞. Cold applica-

tions to the head; mustard poultices to feet; stimulating enemata every half hour. *Afternoon.* No change; has vomited some blood; slight hæmorrhage from the nose. Continue same treatment.

8th. Restless during the night; attempted to get up; can give no account of himself. When asked where he has pain, says in his head; pupils dilated; pulse small, 74. Continue same treatment, with cups to the nape of the neck. *Afternoon.* Very restless; pulse full, 78; had frequent evacuations from enemata. R. V. S. 6 oz.; mustard fomentations to feet; cold to head.

9th. More sensible; sleeps a great deal; made to answer questions with difficulty; complains of his head; frequent evacuations; refuses to take any medicine; little or no stertorous breathing; pulse small, 60. R. Cups to nape of neck; continue applications; sol. sulph. magnes.; and infusion of senna, wine-glassful every hour.

10th. More sensible; does not sleep so much; pulse 64. Continue medicine.

15th. Much better; quite sensible. Continue cold applications to head.

20th. Discharged, cured.

Case II. *Extensive Fracture of the Skull.*—William Jones, Englishman, aged 18 years, fell from the deck into the hold of the British barque Achilles, on June 1st, at half past 6, A. M.; height of fall about 21 feet. When taken up he was insensible, and was immediately brought into the hospital; whilst on the way thither he vomited up some blood. Admitted about 9 o'clock, A. M., presenting the following appearances. The scalp on the left parietal bone was divided to the distance of about an inch, caused by his head striking on a stone. Coughs up mucus streaked with blood; left clavicle fractured near the external extremity; complains of his back when moved; skin cool; pupils dilated; pulse weak, 100. R. Cold applications to head and enemata of salt and sulph. sodæ repeated every hour. 1, A. M. Pulse 100, not full, reaction taking place slowly; very restless; spits up blood. Continue same treatment. 4, P. M. Has vomited some blood since last visit; five injections were administered; had but one evacuation; pulse 84, full and strong; respiration very laborious; quite insensible; throat seems as if full of mucus. R. V. S. 12 oz.; pulse risen to 112; cups to temples; mustard poultice to feet; continue enemata and cold applications to head. 10, P. M. Pulse 94, irregular; had one evacuation by injection; groans very much; very restless; profuse sweat; stertorous breathing. Continue enemata and cold applications to head.

2nd, 8, A. M.—Passed a very restless night; injections were administered; had no evacuations; skin hot; pulse 134; quite insensible; groans a great deal. ℞. V. S. ad deliquum animi, during which operation he had a large evacuation; cups to nape of neck, 6 oz.; stimulating enemata; pulse risen to about 160.

5, P. M. Pulse 156; very weak; had frequent evacuations; comatose; about six injections were administered. ℞. Cups to nape of neck; 6 oz. of blood drawn; hot fomentations to feet, ice to head, and stimulating enemata.

9, P. M. Pulse scarcely perceptible; profuse sweat; skin very hot; has been very restless; at present apparently sleeping. Continue treatment. Died about 3 o'clock, A. M., next day.

*Post Mortem Examination, six hours after death.*—Stomach and intestines in a healthy condition; also the lungs; clavicle on the left side fractured about an inch from the sternal extremity; coronal suture opened; fracture of the skull extending from the junction of the coronal and sagittal sutures across the left parietal temporal and occipital bones through the mastoid and condyloid processes. On opening the skull, all the membranes were found congested; a large coagulum of blood between the skull and dura mater, on the side opposite the fracture; also a quantity of coagulated blood between the membranes, and also on the surface of the brain, and a large coagulum at the base of the brain. The spinal marrow not examined.

Case III. *Gastritis.*—Hassell, aged 37, native of North Carolina, of intemperate habits, states that he was taken on the 20th February with violent vomiting, for which a blister was applied to the epigastrium; admitted into the hospital on the 2nd March, with the following symptoms: vomiting; pulse weak; epigastrium tender on pressure; skin cold; thirst very great; intellect impaired; tongue dry and red; respiration laborious. ℞. ⅛ grain of morphium, mucilaginous enemata, and drinks of gum arabic mucilage.

*March* 3d. Rested pretty well; has not vomited since last visit; pulse 84; coughs a great deal. ℞. Morphium ⅛ grain, sub. mur. hyd. 1 gr. every four hours; cups to epigastrium, and vapour bath.

4th. Feels much better; tongue very red and dry; slept well; pulse small, 84; complains of no pain; respiration laborious; skin cool; coughs much; intellect dull; enemata operated once. Discontinue the morphium and calomel; take effervescing draughts; gum arab. mucilage for drink; enemata of flaxseed mucilage three times a day, and vapour bath.

5th. Pulse 74; slept well; no pain; some appetite; skin cool; res-

piration the same; very little thirst; tongue dry and red. Continue same treatment.

6th. Pulse full, 78; slept well; no pain; cough the same; tongue more moist; respiration better. Continue same treatment.

7th. Pulse 78; slept well; had three evacuations. Beef tea, and continue same treatment.

8th. Rested well; skin warmer; tongue moist; pulse 76; had two evacuations; coughs a great deal; appetite good. R. Gum arab. mucilage and ¼ grain acet. morphium, and effervescing draught.

9th. Pulse 86; complains of soreness in the chest; slept but little; cough the same. Continue the mucilage and ¼ gr. morphium.

10th. Complains of great pain in the side when he coughs; pulse 90; skin comfortable; tongue moist; appetite good. Continue treatment.

11th. Pulse 76; cough less. Continue treatment.

12th. Pulse 72; slept well; feels very weak. Continue treatment.

13th. Convalescent. Allowed chicken soup.

21st. Discharged, cured.

*Remarks.*—This case illustrates the sympathetic affection of the lungs from gastritis. It is what has been commonly called "dyspeptic phthisis." We can readily conceive of the nervous connexion between the stomach and the lungs, by means of the pneumo-gastric nerve causing this sympathetic affection. This takes place in most cases of fevers. If we overlook the true cause of the disturbance of the organs of respiration, and treat the case by stimulating expectorants, which is often done, we must necessarily aggravate the gastric disease which is the primary affection. In the case of Hassell, the symptoms were primarily gastric, and commenced with all the evidences of such an affection. The cough gradually abated when the affection of the stomach was subdued.

Case IV. *Gastro-Entero-Meningitis.*—Benjamin Lawrence, aged 18, native of North Carolina, of sanguineous temperament, was admitted into the Marine Hospital, on the 1st of January, 1835, complaining of constant headach; he states that he had fever in Georgetown, during the summer. I treated him with cups to the back of the neck, mustard pediluvia and enemata, which relieved him in a measure, but the affection of the head became intermittent; the paroxysms were very irregular; he complained of no gastric uneasiness; bowels regular. When the attack would come on, he appeared as if distracted with a violent pain in the back part of the head; he was bled during one of these paroxysms with but little relief. I then

treated this disease as symptomatic of gastro-intestinal inflammation, although there were no evident symptoms of such an affection, but I viewed the evidences of abdominal disease as marked by the affection of the brain. He was accordingly cupped over the abdomen, and had frequent applications of mustard poultices to the same part, pediluvia. But the paroxysms became more frequent, and of greater intensity, and he died very suddenly, as in a fit of apoplexy, on the 27th of January.

*Post-mortem appearances ten hours after death—Brain.*—The arachnoid and pia mater highly injected; substance of the brain firm, about half a pint of dark venous blood effused on the cerebellum. *Stomach.* Mucous membrane inflamed in patches; follicles much enlarged. *Small intestines.* Inflammation throughout the whole tract, but especially at the ilio-cœcal valve, where the inflammation had extended to ulceration. *Large intestines* in a healthy state.

*Remarks.*—This case is highly interesting, to show how and to what a degree gastro-intestinal inflammation can occur without any evident signs, during life, when the brain is implicated. In many cases of fever we may be lead to think that there does not exist any inflammation of the intestinal canal, because we cannot detect any of the symptoms of that affection, for when the brain becomes affected the symptoms of intestinal diseases are not apparent.

Case V. *Peritonitis—Perforation of the Intestine.*—Osgood Merrill, aged 24, native of Maine, has been sick for a length of time, was admitted into the Marine Hospital on the 13th of June with the following symptoms: face flushed; eyes heavy; intellect impaired; drowsy; tongue covered with a white fur, and red at the edges; respiration uneasy; pulse full, 96; complains of great pain when pressure is made on the abdomen, especially in the region of the ilium; bowels have been very loose; skin warm and dry; increased heat over the abdomen. V. S. 10 oz.; mustard poultice to abdomen. 9, P. M. Has been asleep; skin moist; other symptoms the same. ℞. Gum arab. mucilage ℥vj. tinct. opii. camph. ℥ij. M. table-spoonful every hour.

*Sunday*, 9 A. M.—Slept until about 12 o'clock, after which time he was very restless; had one evacuation; delirious; skin cool; pulse 112; drowsy; not much thirst. ℞. Cups to epigastric region, but on account of their causing great uneasiness, they were immediately removed; leeches were then applied, which drew well; gum arab. mucilage ℥vj. acet. morph. ℈ gr. M. table-spoonful every hour; warm fomentations to abdomen; arrow root for diet, and enemata of flaxseed mucilage. 1, P. M. Expresses himself better; skin moist; pulse 104;

fomentations to abdomen very agreeable; had one evacuation of a watery nature. Continue same treatment. 6, P. M. Pulse 106; complains of not feeling as well as he was in the morning; great pain in the abdomen. 30 leeches to the abdomen, which drew well; continue the mucilage and morphium, also the fomentations to abdomen and mucilaginous enemata. 10, P. M. Had one evacuation, of a watery nature. At present asleep; pulse 112, and weak; skin cool and moist. Continue same treatment.

*Monday*, 9 A. M.—Slept until two o'clock, after which he was very restless; had one evacuation during the night; pulse 108. R. Pulv. dov. 10 grs., Sub. mur. hydr. 10 grs. Divide in 5 powders, 1 to be taken every 2 hours. 5, P. M. Had no evacuations, although five enemata were administered; pulse 134, weak; cold sweat; been very restless; great irritability of stomach; difficulty of breathing. Sinapisms of mustard and cayenne pepper to abdomen and legs. 9, P. M. Cold sweat continues; great pain in the abdomen; respiration laborious. Blisters to abdomen and legs; Sub. mur. hyd. ℈ss., Pulv. dov. ℈ss. Divide in 5 powders, take 1 every 2 hours.

Died on Tuesday, at 8, A. M.

*Post Mortem Examination*—10, A. M.—Body emaciated; thorax, on cutting through the cartilages of the ribs, a quantity of sero-purulent matter flowed out; the lungs were in a healthy condition. *Abdomen.* Omentum highly injected, much thickened, and adhering to the peritoneal coat of the intestines so much so as to be with difficulty separated from it; much purulent matter in the cavity of the abdomen; liver of a pale colour; natural size; stomach contained about a pint of yellow fluid; peritoneal coat injected; mucous coat not much inflamed. *Intestines.* Peritoneal coat highly inflamed, the ilium more inflamed than any other portion, and adhering to the other intestines; about two inches from the cœcum it was ulcerated through. Brain not inflamed.

*Charleston, S. C.*

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ART. VII. *Cases of Dry Gangrene, with Remarks.* By BENJAMIN W. M'CREADY, M. D., late Resident Physician of the New York Hospital.

The first of the following cases occurred in a patient who had been placed in one of the medical wards of the New York Hospital, on account of another complaint, and thus came under the care of the

writer, at that time house physician of the Institution. The case being remarkable, both on account of some of its symptoms and of the success attending its treatment, his attention was attracted to the subject; inquiry, with the kindness of friends, furnished him with several additional facts, and he hopes their relation will not be found altogether devoid either of interest or profit.

Case I.* James Cowan, a seaman, 38 years of age, entered the N. Y. H. on the 13th of May, 1835, labouring under a profuse ptyalism, to which he had been subjected on account of a chronic affection of the heart. His face was tumid, he was unable to protrude his tongue, and the saliva continually dribbled from his mouth; several ulcerations likewise existed under the tongue and in the posterior part of the fauces. The patient was well formed and rather stoutly built, but his countenance was perfectly pallid, the adnata remarkably clear, and his whole appearance indicative of chronic disease. His habits he acknowledged to have been for a long time grossly intemperate. Some cicatrices existed about the angle of the jaw and the upper part of the neck, probably the result of scrofulous ulceration. Under the treatment employed, Cowan recovered wholly from his salivation, and by the application of leeches to the precordial region, the affection of his heart was rendered much less troublesome. On the 14th of June he complained of intense pain in the inner part of the left thigh, which was increased by pressure; no alteration in the appearance of the part could be discovered. On the morning of the 17th the left foot was exceedingly painful, particularly in the instep and great toe. It was also observed to be mottled in parts with small spots of a light bluish colour. His general health continued unaltered. His pulse was about 80, full and soft; his tongue clean in the centre and on the edges, and covered with a whitish fur on either side. In the afternoon the foot was somewhat swollen, while the spots had increased in number, covering the sole of the foot, the instep, and the extremities of the toes. The whole foot was tender to the touch, its bottom itching, while the pains, particularly in the great toe, were agonizing. The pain in the inner part of the thigh was as violent as ever, and, in addition, the calf of his leg commenced to add to his sufferings. On the 18th, the great toe had become cold. On the 19th, the livid spots had disappeared from the sole of the foot: the pains still continued, and so excruciating were they as

*The case was in the first place attended by Dr. J. M. Smith, afterwards by Dr. John B. Beck, by whom the principal part of the treatment was directed. It was likewise seen by Dr. J. K. Rodgers, at that time attending surgeon.

entirely to prevent sleep. Opiates were given, but with very partial relief.

*June 21st.*—The lividity of the great toe, instead of being in detached spots, now involves the whole of its extremity; a slight excoriation on the inner side of the nail has assumed a livid appearance. The whole of the toe is cold, and its extremity is insensible. The pulsations of the femoral artery are exceedingly feeble, and the vessel itself has a cord-like feel when rolled under the finger; pulse 105; tongue as before; some nausea; bowels open; 25 drops of the sol. sulph. morph. were prescribed, and warm fomentations were directed to be applied to the inner part of the thigh.

22nd. The tongue is somewhat more furred, the pulse 100, and feebler than before. The fomentations to the thigh have afforded him some relief, but the course of the artery is still very painful. The patient slept a little during the night, though his rest was frequently disturbed by pains in the great toe, which he compares to arrows darting through the part. The pain is much increased whenever the foot is placed in a depending posture.

P. M. The artery in the thigh beats very feebly, but its pulsations are heard with distinctness by means of the stethoscope, having a loud, whirring sound, between that produced by the blast of a bellows and that made by a saw. The pulse is 100, full and tense; the tongue dry; slight nausea is present. In addition to that in the thigh and foot, the patient complains of great pain in the left hypochondrium. He has had three stools since morning, the evacuations being small, fetid, and of a dark yellow colour. A grain of opium is directed to be taken at bed time, and the opium is to be continued in ½ grain doses every four hours.

23d, A. M. Cowan has slept somewhat during the night, and suffers less from pain than heretofore. The appearance of the toe is the same, the insensibility and coldness gradually increasing. The second toe has now commenced to be painful, the pain occurring in paroxysms. The pulse is 100 and compressible; the tongue clean and smooth in the centre and covered with a rough yellowish fur on either side; skin rather dry. During the night the patient has had five stools, of a character similar to the previous ones.

P. M. Complains of pain in the groin, and several of the inguinal glands beneath Poupart's ligament are tender and swollen. The artery about the centre of the thigh continues to be very painful on pressure. At this part the pulsations are so feeble, that beneath the fingers many of them are lost altogether, and consequently the pulse

seems much less frequent than at the wrist; by means of the stethoscope, however, the pulsations can be heard much more distinctly than at any other part of the thigh, having a peculiar loud whirring sound, perfectly synchronous with the artery at the wrist. The patient complains likewise of pain in the course of the anterior tibial artery, extending upwards from the toe to six or eight inches above the ankle. The pulse is 98, and soft; the tongue cleaner than in the morning. There have been five stools since last visit; appetite good.

24th, P. M. Slight vesications have appeared about the discoloured parts.

25th, A. M. The vesications have burst, and discharged a bloody coloured serum. Pulse 105, and compressible; tongue somewhat furred; the bowels continue loose, there having been three evacuations during the night; the pain in the left hypochondrium remains unabated.

26th, A. M. The cuticle has become detached at various points from the surface of the gangrenous parts, leaving the cutis beneath of a reddish-brown colour, and of a glazed appearance. A small discoloration has shown itself upon the extremity of the second toe. The enlargements of the inguinal glands have subsided. Eight leeches applied to the course of the femoral artery.

P. M. Pulse 97; tongue almost clean; bowels loose; six stools since morning. On examination, found the pulsations of the artery at the external malleolus perfectly synchronous with those at the wrist; unable to discover distinct pulsation in the artery at the inner ankle.

27th, A. M. Complains of pains and tenderness of the abdomen; bowels much relaxed; during the night has had seven or eight stools, of a dark yellow colour, thin and fetid. Tongue as before; pulse 90 and soft; skin hot and dry. The toe has been excessively painful during the night.

P. M. Pulse 96; unable, after an attentive examination, to discover any pulsation in the anterior tibial artery, the difficulty of the examination being much increased by small, irregular, spasmodic contractions of the muscular fibres, very closely resembling pulsations; neither could the branch of the anterior tibial running along the upper part of the foot be at all discovered, but a few inches above the ankle it could be made out with great distinctness. One dozen leeches to be applied to course of femoral and anterior tibial arteries.

28th, A. M. Patient expresses himself much relieved by the leeching, it having alleviated in a remarkable degree the pains in the thigh, leg, and upper part of the foot. Pulse 105; light stools since last night. Mist. cretacea. At noon the leeching was repeated.

P. M. Expresses himself still farther relieved by the application of the leeches. The toe is still painful; the nail is becoming detached, and a considerable sanious discharge has taken place from under it. Five stools since morning.

29th, A. M. Pulse 110, and full; has had no stool during the night; appetite good; has rested well—better, indeed, according to his own account, than since his first attack. The thigh now gives him no uneasiness, but there is still pain when pressure is made about the middle of the femoral artery. The sawing noise, before heard only over the extent of a few inches, has become louder, and is diffused over a greater space, being distinctly heard from the crural arch to the bend of the knee. The toe is still acutely painful, and a slight erythematous blush surrounds the parts in a state of gangrene. Instead of being cold, the parts next to the slough are now warm to the touch.

From this time Cowan continued steadily to improve. The pains in the thigh and leg wholly left him, though considerable tenderness was still evinced when firm pressure was made in the course of the femoral artery, about mid-way between Poupart's ligament and the knee joint. The toe itself still continued acutely painful, though this did not prevent the patient's sleeping soundly at night. On the thirtieth, a line of demarcation completely separated the gangrenous from the living part. The slough now extended as far as the articulation of the first and second phalanges, and the cuticle was completely detached, leaving the parts beneath black, shining, and inodorous. The diarrhœa, which continued, notwithstanding the large quantities of opium taken, became less troublesome under the use of the mistura cretacea; and as the pains in the toe became less violent, the opium was gradually diminished in quantity. One dozen leeches were once more applied to the seat of tenderness in the thigh, and again with evident relief.

On the 25th of July, Cowan was discharged by request. By this time the furrow between the dead and the living parts had extended as deep as the bone, and the patient himself had removed portions of the slough by means of a razor. The bone was denuded to the extent of several lines, and two or three scales of bony matter had separated. The same sawing noise could be heard by means of the stethoscope in the femoral artery, but it was neither so loud nor heard over so extensive a space as formerly. The pulsations of the artery, though still feeble, has become stronger and more distinct. The general health of the patient was much improved; immediately before his discharge he had walked for several hundred yards about the grounds of

the Institution, an exertion of which he had been incapable for some time previous to his entering the hospital; and though the cardinal disease still remains, and will, in all probability, one day carry him off, he expresses himself better and stronger than he has been at any time within the last six months.

*Remarks.*—In this case the cord-like feel of the artery, the feebleness of its pulsations, and the peculiar sound heard by means of the stethoscope, in all probability depended on a partial obstruction of the calibre of the vessel, by those deposites of fibrine which have been so generally detected in these cases on post-mortem examinations. The pain which was experienced in its course—a pain which was increased by pressure—seemed to be indicative of some inflammation of the vessel, and the hypothesis was confirmed by the success of the treatment based upon it. Until the application of the leeches the patient had been constantly becoming worse, and from that period his improvement was equally manifest. Indeed he expresses himself to have been relieved immediately after they had been taken off, and was himself anxious that they should be reapplied. The pain, too, it is to be observed, was first experienced in the thigh, nor was the foot affected until several days after.

As was remarked by Dupuytren, the first evidence of the improvement of the patient was the return of warmth to the parts bordering on the slough. While the gangrene was extending, the sensation of cold kept constantly several inches in advance of it, and the parts resumed their natural temperature immediately before the appearance of the line of demarcation. M. Dupuytren remarks, that "the cold is not, as we would imagine, similar to that of the dead body, and which occurs only because the mortified parts acquire the same temperature as the surrounding atmosphere; it is an icy cold, greater than that of the dead body—greater than indicated by a thermometer exposed to the air or immersed in running water. In this case the thermometer was not employed, but to the touch, the parts, though cold, did not by any means seem so to the degree mentioned by M. Dupuytren.

Inflammation of the large arteries supplying the part, is asserted by M. Dupuytren to be invariably the cause of dry gangrene. Recent observers have impugned this opinion on the evidence of post-mortem examinations. Is it always in accordance with the facts observed in the living body? Are the same symptoms always the result of a single cause? or, as in other instances, may they not arise from different pathological conditions? Boyer* relates a case of dry gangrene which

* Traité des maladies chirurgicale.

he attributes to compression. A young man received in his leg the charge of a fowling piece, which fractured the bones, without comminuting them. The wound was dressed by means of a tight bandage, covering the foot as well as the leg; the nutritious fluids no longer reaching the limb, it became diminished in volume, and was seized with dry gangrene. The patient was now brought to the Hôpital de la Charité; he was very weak, the limb was reduced in size, the muscles wasted, black, and resembling smoked beef, and the parts could be cut without exciting the slightest hæmorrhage or the least pain. The line of demarcation formed immediately below the knee joint; hospital gangrene seized the sound part, and the thigh was amputated. Here the parts affected by the pressure alone became gangrenous: was the gangrene the result of an arteritis?

The following case is still more irreconcilable with Dupuytren's opinion of the pathology of the disease; and in it too the treatment which he recommends proved of no avail.

Case II. Miss R. æt. 32, a woman of slender and delicate frame, but who had always enjoyed good health, had suffered occasionally from what she considered as rheumatic pains affecting the right forearm—more particularly the wrist. These pains gradually became more constant and more severe. About the 1st of September, 1835, during the night she was seized with an excruciating pain in the right hand; so violent indeed was it, that, unable to remain in bed, she rose and traversed her apartment in a state of the greatest agony. The hand was pale and cold, and though the seat of such intense pain, seemed, to employ her own expression, as if it were dead. After some time the hand became redder than natural, while her own sufferings were somewhat alleviated. The pain, however, was frequently renewed in paroxysms, and so severe was it at all times, as almost wholly to prevent her from sleeping. For some time the pain was equally severe in all her fingers, shooting up from their extremities; after five or six days, however, several purple spots showed themselves upon the tip of the middle finger, and the pains in this now began chiefly to attract her attention. The spots extended themselves, the pains continued severe, darting, and subject to exacerbations, the finger became cold and its extremity insensible; in fine it was seized with dry gangrene. A practitioner was now called in, by whom Miss R. was bled from the arm. The symptoms were not perceptibly mitigated, nor was the progress of the disease arrested. All this time her general health did not suffer otherwise than from the pain and from the fatigue consequent upon her being deprived of her rest. About four weeks after the first attack, she consulted Dr. J.

Kearney Rodgers. The mortification by this time involved nearly the whole of the last phalanx, the part was cold, insensible, black, shrunk in size, hard, and giving out no offensive odour. The middle finger was still the seat of extreme pain; the extremities of the other fingers were affected with a tingling sensation, sometimes amounting to pain, and occasionally shooting up the forearm, and even into the axilla. Pulsation could not be discovered either in the radial, ulnar, humeral or axillary arteries; no part of their course seemed painful on pressure, nor could the circulation through them be discovered by means of the stethoscope. Disappointed in not finding any signs of an inflammation of either of the great arteries, which, from having seen the preceding case, he had anticipated, Dr. Rodgers pursued the examination. Immediately above the clavicle, a firm bony tumour of great size was discovered; this was decided to be an exostosis, arising from the transverse process of the sixth or seventh cervical vertebra. The tumour approached very near to the clavicle; by its pressure upon the subclavian, it had caused its obliteration, and the tingling sensations felt at the extremities of the fingers and the pains shooting up the arm were in all probability the consequences of a similar pressure exerted upon the nerves. Miss R. was directed to dress the gangrenous parts with the balsam of Peru, to apply stimulating frictions to the extremity, and to endeavour to sustain the warmth of the limb by wrapping it in flannel and cotton bats. Contrary to expectation, in the course of a fortnight, a line of demarcation was formed between the gangrenous and healthy parts, and though still subject to the tingling sensations in her fingers and to the pains shooting along the arm, Miss R. has every prospect of at least a temporary recovery.*

In cases of dry gangrene, should we ever have recourse to amputation before the line of demarcation is formed between the dead and living parts? The majority of surgeons have decided in the negative. Influenced by his notions of the pathology of the disease, Mr. Dupuytren asks, "is amputation of any efficacy against an arteritis?" The question thus stated, he observes, is readily resolved. An operation would leave the cause of the disease untouched, and without in the least arresting its progress, would expose the patient to the suffering the loss of blood, and the irritation attendant upon it. But we have already seen, that, though the symptoms sometimes give it support, the theory of the French surgeon is by no means of universal

*The writer lately saw Miss R. and found that the third phalanx had separated at the joint, that the stump had cicatrized, and that the recovery was complete.

application; of course, the conclusions which he draws from it fall to the ground, and experience has shown that amputation may, in some cases, be resorted to with advantage before the progress of the gangrene is arrested. The details of three cases which occurred in the practice of Dr. Mott* of this city, are now before me, and though in neither case had the line of demarcation been formed, in two of them the operation proved completely successful. The first case is that of a farmer, 45 years of age, of middle size, good constitution, and temperate habits. He had had no symptom of disease of the heart or great blood-vessels, and the only complaint to which he had been liable was the bilious colic, of which he had been subject to yearly attacks. On the afternoon of the 12th of July, 1833, after having been over-heated by his morning's work, he was seized with cold chills, soon followed by a burning fever. Shortly afterwards the first joints of all the toes of the right foot were seized with violent pains, accompanied by a sensation of intense heat, and these pains continued to torment him night and day for nine months. A number of physicians were consulted, and a variety of remedies, stimulating, anodyne and antiphlogistic, were had recourse to without the least advantage. Mortification finally commenced in all the diseased toes, and advancing gradually, at length involved the whole of the foot and part of the leg. During its advance it was preceded in the parts which it attacked by the same burning heat and intense pain which had originally been confined to the toes. When Dr. Mott saw the patient, he found the femoral artery of the usual size, devoid of pulsation, and rolling like a tendon under the finger. The man was exceedingly debilitated, the excessive pain deprived him of sleep, and his appetite was entirely gone. Believing that in such a condition he could not long exist, Dr. M. determined to give him the chance of life which an operation afforded. On the 24th of March, 1834, the thigh was amputated about midway between the groin and the knee. The femoral artery required no ligature after the operation, being entirely blocked up by a firm coagulum; the branches of the profunda alone bled; and they but little. For several days after the operation, it seemed as if the patient must have sunk, but under the free use of good wine, the solution of the sulphate of quinine and of the sulphate of morphia, he finally rallied. At first, the lips of the wound appeared pale, and the discharge was thin and fetid. The straps were removed, the balsam of Peru was

*These cases were furnished me by the kindness of Dr. Starr, a pupil of Dr. Mott, who introduced them into his inaugural thesis on "Dry Gangrene."

liberally applied to the wound, and the whole surface of the stump kept constantly wet with it. In a short time the aspect of the wound was changed, and under the same application it healed entirely. On examination of the part removed, the femoral artery and the arteries of the leg were found completely filled with a substance resembling fibrin, which adhered slightly to the inner coats of the vessels.

In both the other cases of dry gangrene, in which Dr. M. had recourse to amputation, the patients were old men, passed the age of 60. In one the leg was taken off half way between the ankle and knee. The gangrene had commenced about six months before; the patient was feeble from age and long confinement, but his constitution was not much affected. The operation succeeded in arresting the disease, and the patient died of dysentery some months afterwards. In the other case, the general health of the patient had suffered considerably from an attack of hydrothorax some months before the gangrene had supervened. It began in one of the smaller toes, and proceeded gradually, unretarded by all the means that were employed, until the whole foot was involved. In this case the general health was much affected, but the patient, as a dernier resort, desiring an operation, Dr. M. amputated the limb: mortification seized on the stump, and the patient died 14 days after the operation and six weeks from the first appearance of the gangrene.

*New York, March*, 1836.

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ART. VIII. *On the indications of Dessault in the treatment of Fractures of the Clavicle, and the manner in which they are fulfilled by the apparatus of that surgeon. Extracted from a demonstrative Lecture delivered before the Philadelphia Medical Society, November 21st*, 1835. By REYNELL COATES, M. D.

There are few methods of treatment in cases of fracture, if we except accidents of this character involving the os femoris, that have led to so much discussion as the celebrated triple bandage of Dessault. Its action has been represented by some as so utterly intolerable to the patient, that it would be better to trust fractures of the clavicle to the simple efforts of nature, rather than incur the evils unavoidably attendant upon wrapping the whole chest and arm in a series of tight dressings of enormous length, rendering the breathing of the patient entirely abdominal, and to a considerable degree imperfect. The

eloquent but sweeping denunciations fulminated against this plan of treatment by the late Mr. John Bell, are too well remembered to require a comment here. The difficulty of avoiding an arrest, or at least an embarrassment, of the circulation in the arm from the necessary pressure of the turns of the bandages, particularly in old and emaciated patients, and the utter impossibility of their systematic application in adult females, have led many to reject the apparatus. Its apparent complexity, and the great skill required in its adjustment, confine its successful employment to those surgeons who have been long practiced in the art of bandaging, for by such alone can it be made to succeed at all. The length of the rollers, and their consequent extensibility also, render their continued effect uncertain, and the necessity of their renewal frequent.

On the other hand, the materials for the apparatus of Dessault are every where obtainable, and the surgeon can prepare them in a few minutes without requiring the aid of an assistant—no mean advantages in many situations.

If we were to attempt to judge of the value of this apparatus by the vaunted test of experience, we should immediately find ourselves lost amid the conflicting testimony of different eminent practitioners, some of whom speak of great success, and others of total failure, in its employment.

In the midst of all this conflict of opinions, precepts and result, the apparatus of Dessault still continues to occupy its place in many of the systematic works, and it is still commended and demonstrated by many surgical teachers. That it has never been totally rejected, proves that the bandage possesses "its capabilities," as the celebrated landscape gardener, Mr. Browne, was wont to say of even the most unpromising tract of country. But, on the other hand, the frequent failures occurring to the best surgeons establish the fact that this plan of treatment is not *always*, even if it be *generally*, successful; and by success we do not mean the cure with perfect coaptation of the fragment, but *cure without deformity sufficient to strike the eye of the observer immediately.*

It has been too much the custom for the warm defenders of Dessault to charge the unfortunate results frequently following his mode of dressing *to the clumsiness of the operator*, but although the neglect of the art of bandaging in many countries, and recently even in France, may render this want of skill a frequent source of evil, yet we believe that a more general and important cause exists in hasty generalization, and mistakes in the proper indications of treatment, with which

the originator and the strong advocates of the plan are every where chargeable.

In regard to the result of the treatment in the most successful hands, we will make but two short comments, which should act as a caution to those who so freely utter the charge of want of skill. The venerable gentleman who stands at the head of American surgery, and whose manipulations with the roller approach very nearly to the limits of perfection, informed us in 1824 that he had never seen a case of fractured clavicle *cured by any apparatus, without obvious deformity.* Now it is well known to all American surgeons, that the apparatus usually employed, and recommended by that gentleman, is the triple bandage of Dessault, with but slight modifications. According to the best information within our reach, the apparatus, as represented in the systematic works, is no longer employed by any of the great practitioners in this country. When used in actual practice it is generally subjected to extensive modifications. In the Pennsylvania Hospital it is now totally discarded, and on account of its frequent failures. How then can we explain the contradictory views of the opposite surgical parties who defend or oppose the method of Dessault? and how shall we excuse ourselves in the occasional use of some of its modifications?

The consideration of these queries leads us into a critical analysis of the indications of treatment pointed out by Dessault, the parts of his apparatus which are unnecessary, or which counteract the very purposes for which they are designed, and the particular cases in which alone his method is defensible upon philosophical principles.

First, then, of the indications.—The special function of the clavicle is to preserve a proper distance between the apex of the shoulder and the sternum, in order to give precision and freedom to the motions of the arm, while it permits, by means of its two articular connexions, the proper movements of the shoulder. When its integrity is destroyed by fracture, it is no longer capable of performing this function. The pectoralis major and minor, and the latissimus dorsi, aided by part of the power of the great trapezius and some other muscles, draw the shoulder towards the side, while the weight of the arm at once destroys the juxtaposition of the fragments of the clavicle by drawing the humeral fragment downward. Such, then, are the first tendencies to displacement of the shoulder.

But the descent of the scapula at its posterior edge is almost immediately checked by the levator scapulæ muscle, which retains the superior angle of the bone at nearly its natural level. The humeral edge of the great trapezius muscle might be supposed to act in the

same manner upon the acromion, though with rather less energy, in consequence of its great length and its curvilinear obliquity; but the moment the shoulder begins to approach the side, the fibres which form this edge are relaxed, and the acromial extremity of the scapula continues to descend with the shoulder, causing a partial revolution of the whole bone round its superior angle. This rotatory movement is of course very much restricted, but it is sufficient to produce some slight approximation to the spine, and some little undue prominence of the inferior angle of the scapula. The rhomboidei muscles aid in this placement.

A considerable portion of the force of the trapezius, with a small part of that exerted by several other muscles, tend to draw the whole scapula nearer to the spine; but this tendency is in a great degree, if not entirely, counteracted by the serratus major anticus, the functional integrity of which is in a very slight degree affected by the accident. This muscle is the natural antagonist of those just mentioned, and it is not more fully relaxed by the descent of the shoulder than are those which it opposes. Hence the muscular stasis of the base of the scapula cannot be considered as influenced perceptibly by either of these sets of muscles. We have examined very carefully the actual position of this part of the bone in cases of fractured clavicle, and have never been able to observe any *decided evidence* of its approach to the spine.

While the shoulder is descending and the scapula rotating, as has been represented, the force of the whole muscular apparatus which draws the arm towards the side of the thorax is resisted behind by the powers which preserve the stasis of the base of the clavicle, which part becomes an axis of motion; and the natural counteraction of the clavicle being lost, in consequence of the fracture and primary displacement, the apparatus in question causes the shoulder to approach the sternum in the only possible direction, by causing it to revolve forward round the axis just mentioned. This gives to the humeral fragment of the scapula a new species of deformity, by directing its sternal end backward toward the first rib.

The combined result of these various species of displacement, is such, that the humeral fragment is made to take its position beneath the sternal fragment, lying in a direction from without, obliquely inward, backward, and upward, crossing the course of the sternal fragment at some distance from its extremity, thus producing a complicated angular deformity with considerable overlapping. When the fracture occurs in any part of the body of the bone, the subclavius muscle is torn, and it is also contused and enfeebled in most cases by the action of the rough sternal extremity of the humeral fragment.

In nearly all cases of fracture of this part, the sternal fragment experiences some displacement from the action of the clavicular head of the sterno-cleido-mastoideus muscle, which elevates the humeral end of the fragment in greater or less degree, according to the greater or less proximity of the fracture to the insertion of that muscle, and the more or less severe injury inflicted on its principal antagonist, the subclavius.

Having thus portrayed the surgical pathology of the accident, we are now prepared to examine the indications of treatment as advanced by Dessault.

According to this author, the displacement of the humeral fragment taking place in a direction downward, inward and forward, it is necessary to effect the reduction, by carrying the shoulder backward, outward, and upward. Now, it is evident, from what has been already stated, and after a little reflection, that but one of these three kinds of displacement takes place primarily, and that the other two are consecutive and immediately dependant on the first. Let us explain. Before the fracture takes place the stasis of the shoulder is dependant upon the tonicity of the muscular fibres which support the clavicle and scapula, none of which are injured in cases of fracture of the body of the former bone. Waiving, then, the effect of the general relaxation resulting from the injury, which, in such cases, is too trivial to be taken into the account, and neglecting also the very slight support yielded to the shoulder by one portion of the sterno-cleido-mastoideus muscle, the shoulder is as well supported after as before the accident, until, by approaching the side, it causes a relaxation of the edge of the trapezius muscle. If then, there be a complete interlocking of the fragments of the clavicle without shortening of the bone, or if the juxtaposition of the fractured extremities be not destroyed, we should infer, theoretically, that the shoulder will not be drawn downward by the weight of the arm. The result of practical observation has convinced me that this theoretical conclusion is correct. In a rare case of fracture of the body of the clavicle without apparent shortening of the bone, and with interlocking of the fragments occurring in an adult patient in the Pennsylvania Hospital some years ago, there was noticed a slight angular deformity, the angle looking upward and backward, but the drooping of the shoulder was scarcely perceptible. This fact explains the nature of several cases which I have seen, wherein old fractures of the middle of the bone have been found united almost without deformity, though the patients had simply carried their arms in slings, either by the advice of practitioners in the country, or at their own suggestion. Again, in fractures of the ster-

nal extremity of the clavicle—where the interlocking of the fragments is more common, and the shortening of the bone is inconsiderable—the depression of the shoulder is comparatively slight. It is sufficiently obvious, then, that were it not for the approach of the shoulder to the side, the displacement downward would not take place to any considerable extent.

It is needless to prove that the rotation of the shoulder forward is the consequence of its approach to the side, and cannot occur when it preserves its proper distance from the mesial line; for the connexion, or rather the identity of these two forms of displacement is too obvious for comment after what has been said of the muscular connexions of the base of the scapula. The slight rotation of the last mentioned bone round the attachment of the levator scapulæ, is still more remotely consecutive, for it is produced by the subsidence of the shoulder, which is itself consecutive to the displacement toward the mesial line.

The knowledge of these several stages of displacement are important in the reduction of the fracture, and the science is deeply indebted to Dessault for pointing them out, though with less regard to their order and causes than was desirable; but fractures of the clavicle may be ranked among those injuries in which the tendency to displacement is constant, and which, therefore, require permanent extension and counter extension; and, in carrying out his views of treatment, Dessault became involved in several important mechanical errors, the necessary consequence of his neglect of that order and those causes. His indications, correct, as has been stated, in *the reduction*, are far from being so in *the retention*. Not content with carrying the shoulder upward, backward, and outward to its proper position, he endeavoured so to arrange the limb and the rollers, as to act permanently in this triplex direction. I will now endeavour, firstly, to show that this complexity of action is unnecessary, and, secondly, to explain the important evil resulting from the attempt to effect it.

If the remarks already offered in explanation of the order of displacement be correct, it follows that so long as the shoulder is kept at a proper distance from the body, no forward displacement can occur, and the disposition of the shoulder to subside is almost insignificant; and it matters not whether this distance is maintained by the clavicle, as before the accident—by the hand of the surgeon, on completing the reduction—or by the pad or other apparatus after the dressing. While it is preserved by any of these means, the muscles, when at rest, secure, very nearly, the proper relative position of the shoulder. So far, then, as extension is concerned, (for the question of the

coaptation of the fragments is a distinct one,) the principal indications are, to carry the shoulder outward to its natural position when in a state of repose, and there to secure it and the arm at rest. To accomplish this it is necessary to give support to the elbow, to remove the slight remaining tendency to depression and to prevent some of the motions of the shoulder. The extension is then made in the natural direction, agreeably to the laws which govern us in the treatment of other accidents of the same nature, and hence it is obviously unnecessary to superadd any apparatus designed to force the shoulder backward.

It would be wrong, however, to pass unnoticed the existence of cases in which the position described is insufficient to secure the coaptation of the fragments. When the humeral extremity of the sternal fragment is elevated by the sterno-cleido-mastoideus muscle, there are two methods by which the fragments may be placed in apposition; 1st. By drawing the sternal fragment downward to the proper level, and 2nd. By elevating the shoulder and humeral fragment above their natural level. The former of these plans is always the better, when it can be employed. Now, when the fracture occurs near the shoulder, the third bandage of Dessault may be made to effect this object with perfect facility, but when the bone is broken between its centre and the sternum, it is not possible to accomplish this object by means of any apparatus now in use, and we have no resource but to follow the other indication, by carrying the shoulder strongly upward, and there maintaining it. To do this with certainty, by means of the apparatus of Dessault, is altogether impossible, as will be shown in the sequel. Still, even in such cases, no advantage can be gained by carrying the shoulder backward after it is once secured at a sufficient distance from the side, and they continue exceptions to the indications of cure as laid down by the author whose views are under discussion.

I will now proceed to mention the great inconvenience resulting from the unnecessary attempt to carry the shoulder backward, by the apparatus of Dessault. For this purpose the surgeon draws forward the elbow of the injured side, inclining the pad in the same direction, in order that the third bandage may act in such a manner, while elevating the elbow, as to force the os humeri strongly upward and backward. This position deprives the forearm of any support from the chest until the humerus is rotated strongly inward and the hand placed on the abdomen; which is accordingly done; and the arm being bound strongly to the side by the second roller, the line of its greatest pressure on the pad corresponds with the rout of the humeral

artery, which is strongly compressed, particularly in emaciated subjects, and the circulation of the arm is seriously embarrassed or actually arrested. In order to remove this difficulty, it is not sufficient to loosen the third roller—on account of which the difficulty is incurred, though it is really of comparatively little use—but it is absolutely necessary to relax the second roller, upon which almost all the beneficial result of the apparatus, when properly applied, immediately depends! It is this embarrassment of the circulation, which constitutes the objection to the apparatus of Dessault, and which has led many surgeons to condemn it, too frequently without substituting a better. Now, the fault lies not in the apparatus, but in the indications which are intended to be fulfilled by it. Let the pad be placed perpendicularly, and the arm placed over it in the same direction, with the forearm flexed and directed forward, and the difficulty ceases in a great degree—the humeral artery courses between the pad and the front side of the second bandage, and is but little compressed, except in old patients and those who are very deficient in muscular tone. In this position, the upper part of the forearm receives considerable support from the chest and pad, and its lower extremity with the hand being suspended in a sling, the attitude will be found comfortable, nor will the slight freedom of rotation permitted to the limb be productive of perceptible motion in the fragments of the clavicle. Nothing is lost by this arrangement but the unnecessary power of forcing the shoulder backward.

The real indications, then, in effecting extension, coaptation and retention, by means of the apparatus of Dessault, in those cases to the treatment of which it is applicable on philosophical principles, are these: to secure the shoulder at a proper distance from the side by means of a pad, and at a proper elevation by a roller—to confine the arm in a state of rest, and to depress the humeral extremity of the sternal fragment when necessary. We will now proceed to analyse the action of the several pieces of this apparatus, and to point out what parts may be rejected with advantage, and what precautions are necessary in forming and applying them.

1st. *Of the Pad.*—A great variety of materials have been proposed or employed for the formation of the pad—such as pieces of linen, quilted wadding, bags of tow or flax, chaff bags, &c. One general and insuperable objection exists against all the softer materials, much as they are praised by some; namely, their compressibility. They have been recommended on the plea that, by distributing the pressure over a wider surface, they diminish its intensity; but the force required to counteract the power of the muscles which draw the shoulder

to the side, when it acts with regularity and permanency, is exceedingly small. Even in fractures of the thigh the force required for extension is comparatively slight, when employed early after the accident, and when the surgeon does not commit the folly of mistranslating the old law of avoiding all sudden extensions into an apology for occupying weeks in performing what can be accomplished with inconceivably less force in as many hours. But the muscles which draw the arm to the side exert very little tonic contraction when at rest, simply because the gravity of the member preserves it in its proper position, when unemployed, without their aid, and their action is much more easily overcome than would be supposed by those who neglect, in their calculations, this physiological fact. It is therefore unnecessary to distribute this slight pressure over a wide surface to prevent the danger of excoriation, which accident I have never seen as a result of the apparatus. But there are strong positive objections to the use of soft materials. They inevitably yield by degrees to the contraction of the muscles, rendering the extension variable and uncertain; and, by enveloping a considerable portion of the inner side of the arm, they constantly add to the embarrassment of the circulation by pressing upon the vessels. The pad should therefore be made as firm as possible, and few contrivances are better than the original one, composed of separate pieces of linen ranged in the form of a cuneiform compress, and stitched together. The chief objections to this pad are the time required to make it, its adaptation only to cases of nearly similar age and size, and the difficulty of cleansing it when soiled. I have always employed, in private practice, a piece of ordinary bandage muslin, from four to five inches in width, and from eighteen to thirty-six yards in length, folded extemporaneously into a graduated compress in the form of two wedges, united by the bases, with one side flat, the other forming a double inclined plane, and a little more than twice the length of the required pad. This compress, doubled upon itself toward the pyramidal side, and enveloped in three or four turns of the extremity of the same band, is ready for application, and may be cleansed when not in use. The most general objection to linen pads is their weight, which makes it difficult to support them properly in the axilla. Perhaps one of the best pads might be formed of cork or light wood, covered with a moveable bag of buckskin, perfectly flat on one side, and adapted to the form of the chest on the other.

2nd. *Of the mode of supporting the pad, and of the first roller.*—The turns round the shoulder and axilla of the sound side, which form part of the first bandage of Dessault, though still figured in many books, are, I believe, universally discarded in practice. The direction

of those turns is such as to render their action almost nugatory, and besides the impossibility of making them to lay smooth, they act upon parts too compressible to give firm support. Several other plans for suspending the pad are now employed, and of these, the best is the simplest. It consists of a simple scapulary, formed of a piece of roller, the centre lying on the top of the shoulder and side of the neck on the uninjured side, and the ends secured to the pad a little below its middle. By this contrivance the original intention of the first roller is supplied, but its use is continued, to give additional fixedness to the pad. The pressure of the arm alone is generally sufficient to answer this purpose, and any advantage from the bandage is more than compensated by the inconvenience attending its action on the natural motions of the chest. Still it is well to preserve a rudiment of this part of the apparatus, by passing a few turns round the lower end of the pad and the thorax, in order neatly to secure the beginning of the roller, which may then be continued in such a manner as to answer the purpose of the second roller of Dessault.

3d. *Of the second roller.*—This bandage is intended to confine the arm to the side, and make direct extension by using the humerus as a lever; but, by a misapplication of the principle of the distribution of pressure, the turns are carried up to the shoulder, where the superior casts directly and strongly counteract the extension, thus artificially increasing the force required to approximate the elbow to the side. Again: the lower turns of this bandage, according to the plan of the inventor, are made to pass beneath the elbow and over half the forearm, to assist in the support of the elbow, and to bind the forearm to the thorax. The first of these purposes can be fully accomplished, with much less force, and upon more correct mechanical principles, either by the third roller or by other contrivances; while the second purpose is objectionable upon the grounds laid down under the head *of the Pad.* These upper and lower extensions of the second bandage increase its length by several yards, and purchase a little beauty of finish at the expense of much embarrassment of circulation, great extensibility and uncertainty in the dressings, and some difficulty of respiration. They should therefore be rejected, and the second bandage should extend only from the condyles of the humerus to about the middle of the arm; and when thus confined, it is applicable with convenience both on male and female patients, nor is any considerable force required to accomplish the design of this roller.

4. *Of the third roller.*—This portion of the apparatus is beautifully adapted to fulfil two of the secondary indications in the treatment of fractures occurring near the humeral extremity of the clavicle, namely:

the support of the shoulder and the depression of the humeral extremity of the sternal fragment. But when fracture of the clavicle occurs nearer the sternal extremity of the bone, this roller is useless. Let us explain. The third roller has two points of support—one at the crossing on the top of the shoulder on the injured side, the other at the crossing beneath the axilla of the sound side, and upon these two points the elbow is suspended, as in a double sling, one branch of which is perpendicular and the other oblique. But it must be evident that the security of the suspension upon the second of these points depends almost exclusively upon the first, or, in other words, that if the shoulder and with it the crossing of the bandage resting upon it, be rendered moveable, the elbow cannot be elevated by the action of the crossing beneath the axilla. Now, when the fracture occurs in any part of the outer third of the length of the clavicle the crossing on the shoulder lies over the sternal fragment, and draws it downward as strongly as it draws the elbow upward. This fragment cannot be depressed much below its natural level, and, consequently, the crossing beneath the axilla remains secure and the shoulder is elevated sufficiently to place the fragments perfectly upon a level. If, however, the fracture occur at any point on the inner two-thirds of the length of the clavicle, the crossing on the shoulder rests over the rough extremity of the sternal fragment, where its pressure cannot be borne by the soft parts, or it reposes on the humeral fragment alone, where it cannot produce any effect in elevating the shoulder, because it is left at liberty to follow all the motions of the part. The third bandage, therefore, cannot preserve the shoulder at the natural level in these cases; much less can it elevate the part. But these are precisely the cases in which the shoulder requires to be raised above its ordinary station, because the humeral fragment must be elevated to meet the sternal fragment, which latter cannot be depressed by any apparatus now in use. The apparatus of Dessault is, therefore, inapplicable in fractures of the clavicle occurring at a greater distance from the acromion than one-third the length of the bone.

5th. *Of the Compresses and Sling, &c.*—These accessary parts of the apparatus of Dessault require but a passing notice. The compresses are rarely advantageous, and are generally omitted. A single compress beneath the crossing on the shoulder made by the third roller is sometimes useful in assisting to depress the sternal fragment. If the position of the elbow and forearm which I have recommended be defensible upon correct principles, the sling must of course hang free, instead of being enveloped in the terminal circular turns of the third roller, as is generally directed. The scapulary which is attach-

ed to all the bandages and which passes over the shoulder of the sound side, should not be neglected, for it increases the security of all the dressings.

Having now completed this analysis, I will conclude with a few general remarks.

The apparatus of Dessault, simplified by the modifications suggested, becomes easy of application, and not very uncomfortable to the patient. It is applicable in females with less trouble than is generally supposed. It is decidedly the least expensive and the most readily obtainable of all the contrivances in use, and it enjoys some mechanical advantages over them in fractures of the outer third of the clavicle. It is also extremely valuable in many other injuries about the shoulder. All that need be provided for its application, are a proper pad and one or more rollers of suitable length. The dressing may be accomplished in the following manner.

The patient being seated on a stool, or the corner of a bed, or standing, an assistant behind him places one hand near the upper part of the inside of the arm, while with the other hand he grasps the middle of the forearm of the patient, allowing the elbow to rest upon his own forearm. The assistant then carries the elbow of the patient nearly a right angle with the body, making gentle extension at the same time. The surgeon then pins securely one extremity of a strip of bandage to the front edge of the outer surface of the pad, and placing the thick end of the latter as high as possible in the axilla, he casts the loose end of the strip of bandage over the shoulder of the sound side, draws it strongly downward obliquely across the back, and secures it to the posterior edge of the outer face of the pad, opposite the other attachment. Then, taking the roller and pinning its commencement to the middle of the lower part of the pad, he casts four turns and a half, or more, if necessary, round the thorax and lower part of the pad. He next pins his last turn securely on the middle of the uninjured side, and directs the assistant to bring the arm of the injured side slowly and directly downward to an acute angle with the body. Then, giving the roller in charge to the assistant, he brings the arm vertically to the side over the middle of the pad, supporting the elbow at the same time, and thus completing the reduction.

Retaking the roller, he carries it again round the thorax and the arm, a little below its middle, descending by three or four turns of increasing obliquity to the elbow. If the roller be sufficiently narrow to form a proper substitute for the third bandage of Dessault, he continues it. If not he employs a narrower one. In the former case,

after firmly securing the last turn on the middle of the sound side, he carries the roller thence under the elbow of the injured arm, and from that point follows the ordinary rout of the third bandage of Dessault. Though, in this view of the mode of application, but a single roller is employed, the several parts may be detached or separately applied when long rollers are not conveniently obtained.

Thus employed, the apparatus of Dessault well deserves to retain its station in the materia chirurgica, but it is surprising that neither its inventor nor his successors have pointed out the principal cause of the hostility engendered against it, namely, its employment in those cases to which it is totally unfitted.

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ART. IX. *Case of Incomplete Catalepsy.* By AUGUSTUS C. BALDWIN, M. D., of Georgia.

On the 6th of May, 1835, I was called to visit the subject of this case, a boy of about eight years of age, who was stated to be asleep, and whom it was impossible to awake. About twelve months before, I had been called to the same patient in a similar situation, and was informed by his mother that she had sprinkled cold water on his face, and that she had shaken and slapped him, but that no efforts of her's could arouse him from his slumber. He had at the time of my visit a natural appearance; his sleep appeared easy and pleasant; and in fact, from appearances in general and the condition of his pulse, which I carefully examined, had it not been for the circumstance of my having been called on to prescribe, and the statement of his mother, I never should have suspected that anything unusual was the matter. Having attempted in vain to awaken him, and believing that an undue determination of blood to the head was the cause of his malady, I took from his arm a few ounces of blood. As soon as the blood commenced flowing, he struggled, and soon after awoke in tears; his crying, no doubt, arose from his fright at being bled, as he possibly was conscious of what was going on during the whole time, although he was unable to speak or do any thing to prevent it. After this, he appeared as well as usual, nor did I hear any thing more from him until called on again to prescribe for him in May, 1835, when I found him in a similar situation to that in which he had been in the spring of 1834. His pulse being so natural, and his sleep apparently so easy, and thinking his having awoke so suddenly after the letting of blood on the other occasion might have been the result of accident, possibly, from its being near the time for a natural termination of the sleepy

fit, I directed that he should not be disturbed, and gave it as my opinion that he would pass through his drowsy state, without danger, in a few hours. How long this unnatural sleep had lasted no one knew: the boy had gone to bed in good health on the night preceding, but had neglected to get up at his usual hour this morning. A little after seven, A. M., he awoke as if from a refreshing sleep, appeared as well as usual, and went about his ordinary business. On the 9th, 12th, 16th, 19th and 21st days of the same month, he was attacked in the same manner with his sleeping malady, which was allowed to take its own course, and which terminated each day about seven o'clock, A.M., and he went to his accustomed employment as if nothing had happened. On the 22nd, another attack coming on, I determined to observe the case more closely, and to endeavour to do something for the relief of my patient, there being no prospect of the disease leaving him spontaneously. At this time he appeared, as before, to be in the enjoyment of a pleasant slumber; his eyes were closed, and he seemed to be unconscious of every thing which was going on about him; his pulse was 92 in the minute, and a slight flush could be discovered on his cheeks. On raising his hand and letting it go, it remained in the position in which it had been placed for several moments, and then would fall suddenly; the countenance of the patient remaining unchanged during the whole time of the experiment. On separating the eyelids, the eyes were discovered to be in perpetual motion, rolling from side to side, as I have frequently seen in children in our febrile affections, before being attacked with convulsions; but at no time did they appear to fix themselves on any object, nor could any dilatation of the pupils be discovered. Although apparently unconscious of every thing when undisturbed, the patient, nevertheless, must have been partially conscious of what was taking place about him, for he would smile or shed tears when any thing was said or done to please, frighten, or hurt him. Towards the termination of the fit, he moved himself slightly, groaned occasionally, and grated his teeth together several times. After it was over, he said he had a slight pain in the head, but of this he did not complain long, and in a few hours was as cheerful and as well as usual. About an hour before my patient awoke I took a few ounces of blood from his arm, and cupped him on the back of the neck; but, so far as I could discover, the bleeding and cupping were productive of no benefit. He was then held in a sitting posture, and his feet placed in a tub of warm water. In a short time he appeared to the bystanders to be going into convulsions, was hastily laid down, and in a few minutes awoke. In a quarter of an hour after the fit went off, I called him to me, and inquired how he felt. His reply was, that he was well, and, although he had com-

plained, immediately after coming to himself, of a pain in the head, at this time he denied having any uneasiness whatever, and, to my surprise, gave, on being questioned, a minute account of what had been done for him during his sleeping moments, as well as a correct narrative of all that had been said by persons around during the same period. In the course of the day, he was directed to take a gentle cathartic, which was repeated on the 23d and 24th, during which days he continued free from an attack, as he did on the day of the 25th. On the morning of the 26th, some time after sun rise, he was found in one of his sleepy fits, occasionally groaning and crying. In a little time he appeared as if about to awake, and at length, getting up on his hands and feet, he crawled out of the door, yet he was not awake, for his eyes continued closed, and his head would fall first to one side and then to the other, as it was affected by its own gravitation. By degrees he came to himself and went about his usual business. Occasional cathartics were administered up to the 31st inst., on which day he experienced his next attack, and, when found asleep, was pulled and hauled about and had cold water poured upon his head to no purpose, for the paroxysm continued for its usual time and disappeared, as it had always done before, leaving the patient as if nothing had been the matter. From the 1st to the 12th of June my patient escaped entirely, during which time he took an occasional cathartic, and was believed by all to be in a fair way of recovery; but on the last named day he suffered another attack, which lasted, in spite of all that could be suggested, one hour longer than any of those by which it had been preceded. The two succeeding paroxysms came on the 16th and 25th days of the same month, but presented nothing peculiar. At 9 o'clock, P. M. on the 29th of May, another paroxysm came on, and this was the first time in which the disease had made its appearance in the evening. On this occasion I raised the arm of my patient, and, on letting it go, it remained in the position in which I had placed it; but on desiring him to put it down, he let it fall suddenly. This experiment was repeated several times, and always with the same result. On being asked to show his tongue, he took no notice of the request; but, on my opening his mouth, and telling him that his tongue was not far enough out, he endeavoured to push it farther, and partially succeeded. Several observations were made about him, for the purpose of exciting his laughter, at many of which he smiled, but neither in this instance nor at any other did he ever laugh aloud. From his apparent consciousness of every thing which was going on around him, and from his obeying the several commands which I had given him, I concluded, that it was all an imposition which he was practicing upon me and others, and accordingly recom-

mended the use of the switch, which, from my impression at that time, I had no doubt, would, in a few minutes, bring him to himself, and supersede the necessity of any thing else for the future. It was quickly resorted to, but with no better success than the rest of my prescriptions. During its application he cried aloud, but did not open his eyes, nor show the least symptom of returning wakefulness. I was truly sorry that I had been the cause of his suffering so unnecessarily, for, to my mind, it was then evident, that his situation was the affect of disease, and was not assumed for the purpose of deception. Being satisfied in this particular, and still attributing the situation of my patient to a fulness of the blood-vessels of the brain, I opened a vein in his arm, and took half a pint of blood, from which not the least benefit was discoverable; and as I could suggest nothing else which promised to be more successful, I left my patient to sleep off his fit as usual, which he did by seven o'clock, A. M. on the morning following. On the 3d of July, he suffered another attack, which differed from those which had preceded it in this particular only, that he slept with his eyes open.

Depletion, after so long a trial, having been productive of no apparent benefit, I determined to discontinue it, and conjecturing that the disease, possibly, might be of gastric origin, directed as an antacid and tonic, three grs. of the sub. carbonate of ammonia and half a drachm of the tincture of columbo, mixed in a wine-glass of water three or four times a day. Under this treatment the patient had no fit until the 10th inst., having had an intermission of seven days, during which time he had taken his medicine regularly, and had been confined to light suppers. The attack on the 10th was succeeded by others on the 15th, 18th, 20th and 29th of July, after which there was no other until the 10th of September following, and this no doubt was brought on by a hearty supper taken the night before. From that time up to the present, March 6th, 1836, the patient has enjoyed a perfect exemption from all kinds of disease, and is now as fine a looking boy as any in the country.

*St. Clair, Burke County, Geo.*, March, 1836.

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ART. X. *Observations in the Neuralgiæ.* By CHAS. C. HILDRETH, M.D. of Zanesville, Ohio.

Perhaps in no class of diseases, have greater practical improvements been made within the last few years, than in the treatment of

the neuralgiæ. The profession are much indebted to Mr. Teale, of London, for many valuable discoveries in the diagnosis and treatment of nervous diseases. He has beautifully illustrated and confirmed the fact, that disease of the spinal column, or ganglia of the sympathetic, is not so much evinced by symptoms developed at the immediate seat of the affection, as by pain and irritation at the extremity of the nerves, arising from the diseased mass. Hence, all those nervous affections of the head, heart, stomach, &c. so frequently met with in hysteric females, should not be regarded as diseases of the particular nervous filaments distributed to those organs, but as diseases of the ganglia or nervous masses from which the filaments are derived. This is a pathological fact of immense importance in a practical point of view. It teaches us the actual seat of disease, and the cause and origin of the symptoms attending it. Experience also proves the fact, that pressure over the diseased medulla spinalis produces pain in the filament arising from it; that such pressure cannot be borne to any extent, should there be much irritation or congestion of the neurillema beneath.

By observation, we learn, that the most prompt relief of the neuralgia of the filament is to be found in the removal of this spinal tenderness or irritation, by depletion and counter-iritation.

The attending symptoms evince disease of both anterior and posterior branches of the spinal nerves. Thus, we have rigidity, loss of power, tremors or spasmodic convulsions from irritation of the nerves of motion or volition; partial paralysis and impaired or most exquisite sensibility, and pain in the nerves of sensation. Permit me to give a few cases in illustration of the above observations.

Case I. Mrs. G., æt. 30, has for many years been severely afflicted with pain in her face, head, arms, breast, &c. The pain in her face she supposed to have originated from the extraction of a tooth, and the removal of part of the superior maxillary bone. The pain in her head is of a purely neuralgic character, intermitting, and of the acutest intensity; occasionally darting from the upper part of the cervical spine, entirely around the scalp. Her eyes become tumid and painful during a paroxysm; her face also swells, the muscles of the neck become rigid and painful; her arms partially paralytic, the needle drops from her fingers, and prickling sensations are felt even to the extremity of the limb. Pain is, also, sometimes felt in her side, breasts, and stomach; but these symptoms give her but little inconvenience, compared with the facial and cranial affection.

*By way of consolation,* her physicians uniformly told her that there

was nothing the matter with her *but the hysterics.* The cervical spine was found very tender on pressure throughout its whole extent. Here we at once perceive the fons et origo of all the above symptoms. Pressure upon the first and second cervical vertebræ, caused the pain to shoot around the head, in the direction of the sub-occipital and posterior branches of the second pair of nerves. Pressure upon the next two vertebræ, produced pain in the face and neck. The application of the fingers to the lower cervical vertebræ gave pain in the arms and breast. The manual examination aggravated the pain for some hours.

Directed a blister over the whole of the cervical vertebræ; and sulph. quinæ grs. vj. to be taken in the early part of the day, to prevent the violence of the paroxysm usually occurring in the after part, the quinine to be continued daily. The blister *while drawing* very much aggravated all her sufferings, but afterwards alleviated the same in a far greater degree than any previous application for the last two years. After the drying up of the blister, the pain began to return. The patient being very anxious for relief, and the spine not yet bearing pressure, I determined to abstract some blood by cups. At the commencement of the operation, the patient was comparatively free from pain. The exhaustion of the first cup (over the first and second vertebræ) caused the pain to move slowly around the head beneath the scalp, commencing at the spine, whence it proceeded around a little above the ear to the forehead, and from thence over the parietal bone to the spine on the other side. It proceeded so gradually, that the patient, with her finger, pointed out to me its course and progress. The pain was at first most intolerable, but, after the free abstraction of blood, it gradually subsided. The next cup covered the third and fourth vertebræ, and produced pain in her *cheek* and neck; the next, applied still lower, produced pain in her arms, and slightly in her breast.

In a few hours after the cupping, the pain ceased entirely, and did not again return for several weeks. About a month after the first cupping, her arms became somewhat paralytic, and the facial neuralgia was aggravated. For the relief of those symptoms, she was again cupped over the cervical vertebræ, and the following ointment liberally applied to the part. ℞. Tart. antim. ʒii. pulv. Lyttæ vesic. grs. xv. ceratum simplex ℥i. ft. unguent. S. Apply to back of neck twice daily.

A very irritating and painful eruption soon followed the use of the ointment. It was allowed to desquamate and was produced again and again, until all tenderness on pressure was removed. She is now entirely free from all neuralgic symptoms. The facial neuralgia very

much resembled the tic dolouroux of the books, but was not located in the branches of the fifth pair, nor in the portia dura of the seventh, but probably in the superficial cervical nerves spread out on the cheek. In speaking of facial neuralgia, it may not be amiss to mention, that I have in several instances seen the north pole of a strong artificial magnet, give prompt relief during a paroxysm. Concerning the modus operandi of the magnet, I can say nothing, nor shall I attempt to explain the intimate relation or connexion between the magnetic, galvanic, and nervous fluids. Of the fact, however, as above stated, I am perfectly satisfied from observation. A strong solution of the cyanuret of potash, and a combination of the extr. belladonna with morphia, spread upon adhesive plaster, and worn over the nerve affected, are local applications which promise much relief.

Case II. Mrs. K. H., æt. 38, having recently returned from a malarial district, consulted me concerning an intermittent not long since contracted. I found her in the third paroxysm, with high fever, violent pain in the head and side, with acute sensibility to pressure over the left hypochondrium; her pulse full and strong; skin hot and dry; V. S. to approaching syncope was practised with much *apparent* advantage. Profuse diaphoresis followed the use of the lancet, with prompt alleviation of pain. Her bowels not having been moved for the last three days, a powder containing twenty grs. of calomel and ten grs. of Dover's powder was exhibited, to be followed in three hours by active cathartic pills. Instituting a more minute examination of her case, I ascertained that the paroxysm was quotidian, and that she had but recently recovered from a tertian of seven weeks duration. Her menses had been suppressed for the last two years. In the interim she had been afflicted with the usual routine of hysterical symptoms, as palpitations, globus hystericus, syncope, &c.; general health very much impaired. Notwithstanding the free action of the cathartic medicine, the succeeding paroxysm was far more severe than the last, and was attended with hysterical mania or delirium, of so violent a character, that her attendants supposed her dying. For the purpose of temporarily relieving her, I administered the usual antispasmodics, with the effect of restoring her to consciousness. She now complained bitterly of "rheumatism of her knee." On examination, her left knee was found *somewhat red, much swollen, very painful, and to the touch acutely sensitive,* thus exhibiting all the most prominent characteristics of acute rheumatism. This painful affection of the joint, she informed me, was always very much aggravated during the intermittent paroxysm, and at all other times gave her but little inconvenience.

She also complained of violent pain in the left side, not increased by full inspiration, and unaccompanied by cough; but much aggravated by the slightest pressure. Of course, I could not refer the symptoms to pleuritic disease. To confirm my diagnosis of spinal irritation, I had but to make the requisite examination. Applying my fingers to the first and second cervical processes, the patient complained of increased pain in the head. This being of a superficial character, and confined to the scalp externally, I referred it to a neuralgic affection of the sub-occipital and posterior branch of the first pair of cervical nerves. Pressure upon the lower cervical vertebra produced palpitations, and slight angina pectoris; upon the upper dorsal, gastric distress, flatulence, and globus, compressing the lower dorsal, I could readily refer the increase of pain and sensibility of the side to neuralgic irritation of the intercostal nerves, and the superficial cutaneous branches. Coming to the lumbar spine, I must confess my surprise to find my "rheumatism" so much aggravated by a little pressure on the processes. Began to question the propriety of substituting the term neuralgia of the knee for rheumatism. However, as the disease had all the ostensible properties of rheumatism, and recollecting the prompt relief afforded by the application of *cups to the spine* in acute cases, I concluded to call it rheumatism. This, however, is a matter of but little importance, as in practice we prescribe for symptoms, and not *names of disease.* For, I suppose, it is in this case, as Shakspeare says about the rose; that which we call a rheumatism, *by any other name will be as painful.* Having perfectly satisfied my own mind concerning the nature of the case, I at once proceeded to the treatment, and the upper dorsal being the most sensible part of the spine, I applied a blister to the same, extending over six or eight of the vertebræ. A turpentine embrocation was directed to the remaining portions. During the febrile intermission, sulph. quinæ grs. x. was exhibited with the expectation of preventing the recurrence of the paroxysm. In this, however, I was disappointed.

*Sept.* 2. The irritation of the blister, together with the previous depletion by the lancet (which was, no doubt, decidedly injurious) gave rise to another paroxysm, attended with long continued syncope, and followed by a slight chill and mild fever; but far less violent than the preceding. Stomach very irritable, rejecting frequently its contents. The pain of the side and knee were again aggravated during the paroxysm. Applied sinapism to epigastrium, and gave small doses of calomel and Dover's powders every two hours.

*Sept.* 3. Found the blister discharging freely; stomach much less

irritable; the pain and sensibility of the side much diminished. Applied blister over the lumbar spine, and directed sulph. quinæ grs. x. to be taken before the expected paroxysm. This had the desired effect of preventing its recurrence.

*Sept.* 4*th.* No pain has been felt in the side or knee; but the patient suffered violent headache during the night, and profuse diaphorosis towards morning—feels much debilitated, and without appetite. Directed sulph. quinæ grs. vj. to be taken daily, and a blister to the cervical spine for the relief of the headache, which was evidently neuralgic, as above explained;—generous diet and occasional stimulants were also prescribed. From this time the patient improved rapidly. The blisters were kept discharging for several days, and were re-applied until the spinal tenderness was perfectly relieved. With the subsidence of the spinal irritation disappeared also all those neuralgic, hysteric, and rheumatic affections, with which she had been so long afflicted.

*Dec.* 10*th*, 1834. Patient informs me that she still remains free from the symptoms above detailed, and enjoys much better health than she has had for some years previous.

*Remarks.*—We deem the above case interesting, chiefly on account of its complicated character. We have here presented all the symptoms of spinal neuralgia, hysteria, rheumatism, and intermittent fever, collectively. I need not say that all the above symptoms originated in disease of the spinal column, except, perhaps, the intermittent, which, primarily at least, had a malarial origin. I apprehend, however, that much difficulty would have been found in *permanently* curing the intermittent, without first removing the spinal irritation. She informs me, that her previous attack of ague of seven weeks duration was not checked except by inducing a profuse salivation; nor had she entirely recovered from the effects of the mercury when she first consulted me—thus indicating a strong tendency to a relapse. The first attack had resisted a great variety of remedies—and being finally suspended by the calomel, in a few days returned. The second was promptly checked by a few doses of quinine, together with the *applications to the spine*, and has not since returned.

The rheumatic or neuralgic affection of the knee was, perhaps, the most interesting feature of the case. During her previous attack of ague, she informs me she had suffered rheumatism of the joints of the elbow and wrist; and that the pain, &c., was (as in the present case) confined almost exclusively to the paroxysm. The knee joint has alone suffered since she came under my charge. As before observed, during the febrile paroxysm, she complained much of pain and ten-

derness of the joint. This was also much increased by pressure over the lumbar vertebræ, at the origin of the nerves affected. We think the profession much indebted to Dr. J. K. Mitchell and others, for their pathological and practical observations on the *special* origin and treatment of rheumatism. To the prompt relief afforded by cups to the spine, in the acute stage of the disease, I can testify from personal observation. And although blisters to the spine do not produce such obvious relief as the abstraction of blood by cups, yet in the present instance they afforded almost immediate benefit. The *tenderness* of the spine, which is rather an unusual symptom in rheumatism, was in this case well marked. The intercostal, neuralgic, and the accompanying hysteric symptoms, have been already sufficiently explained.

Case III. *Convulsive Hysteria.*—Jan. 17th, 1833, I was requested to visit Miss S. F., residing eight miles from Zanesville. Found her in convulsions, with rigid spasmodic action of the extensors of the whole system;—highly nervous and excitable—the least noise or motion bringing on the convulsive paroxysm—no fever, or much acute pain at present. Her mother informs that she had suffered violent headache and pain in the side on the day previous, which had been partially relieved by sinapisms. The spasms came on two days previously, and immediately after the catamenia. From the existing symptoms, I inferred derangement of the menstrual function—probably suppression during the period of secretion—but, on inquiry, learned that she had menstruated the usual number of days, *though much too profusely*—and that menorrhagia had existed for the last nine months.

Dr. Tate, I believe, first pointed out to the profession that convulsive hysteria never exists without *disordered menstruation and spinal irritation*, (usually in the upper dorsal and lumbar vertebræ,)—and that hysteria in all its protean shapes, is only *permanently* cured by removing this spinal disease—a suggestion I have almost daily acted upon among delicate nervous females; and of the truth of which I am perfectly convinced from observation. But to return. The patient for two days previous had been rather cold and chilly, but reaction had now come on with full and frequent pulse, and during the paroxysms some flushing of face—V. S. to ℥ xvj. was followed by acet. morphiæ gr. i. with the hope of checking the convulsions. As they, however, proved rather intractable, the warm bath was used with good effect. The perspiration had a peculiarly offensive odour—after the bath pulv. ipecac. comp. grs. xv. was exhibited. In the course of an hour and a half, the spasmodic action was allayed, and the patient went to sleep. The spinal column proved very tender on pressure,

through nearly its whole extent. As soon as the system became narcotized, a blister was applied to nearly the whole extent of the affected portions, in order to effect a permanent cure of the disease. The process of vesication had no unpleasant effect at the time; nor did the spasms recur after its application. It was directed to be kept discharging for almost a week, and to be re-applied should any tenderness of the processes continue. For two years past the patient has has had no return of the hysteria nor menorrhagia.

Case IV. Miss T., æt. 17, residing four miles from Zanesville, has for two years past been troubled with hysterical symptoms. Within the past month they have become much aggravated. She has deranged menstruation, constipated bowels, and occasionally paroxysms of a convulsive disease resembling catalepsy—(no doubt some anomalous form of hysteria.) This convulsive affection, from its frequent recurrence, has somewhat impaired her mental vigour. Examining the case more minutely, I found much derangement of the stomach and bowels, a furred tongue, and verminous symptoms;—occasionally she had fever, violent pain in the head, and delirium. Her mother, (a very intelligent woman,) said that she despaired of her ever regaining her health, as the above symptoms had existed for some years past, and were daily becoming more aggravated—said she thought her daughter's intellect was fast declining, and expressed fears of her becoming entirely idiotic. The patient informed me that the pain in the head was always preceded by pain in the cervical and upper dorsal spine; from which it seemed to radiate to the head, and at once deprive her of consciousness;—the convulsive paroxysm followed. I supposed, on reflection, that the above symptoms originated in part from intestinal irritation, and partly from spinal disease. Her bowels were constipated, and the secretions from the mucous membrane of a vitiated character, as usually occurs in chlorosis. Pressure upon the upper dorsal spine caused her great pain; and upon the upper cervical, produced the pain in the head, and almost deprived her of consciousness. By the repeated administration of large doses of calomel, followed by full doses of castor oil and spirits turpentine, large quantities of lumbrici were evacuated, and the secretions of the liver and mucous membrane gradually became more healthy—her evacuations being at first very dark and effusive. The paroxysms still continued, but were less frequent, and diminished in violence.

To correct the spinal irritation, we at first applied a blister. This, however, had but little effect. Ung. tart. antim. was then applied:—during the coming out of the eruption the convulsive parox-

ysms were aggravated in all respects; but as it gradually went away they were manifestly benefitted. As considerable tenderness still existed over the cervical spine, cups were applied, and blood abstracted with good effect. In a few days afterwards, a very active and irritating application was made to the affected portion of the spine, of pix. Burgund., tart. antim., pulv. littæ vesic. This was applied in the form of plaster, and produced a painful revulsive action, and almost perfectly relieved the spinal tenderness. The irritation in this case was found unusually obstinate. Some counter irritation was made to the affected portion almost constantly, for a space of about *four months*. It was not until after the repeated application of cups, blisters, tart. antim., &c., that the spinal irritation was removed, and the paroxysms ceased. During the cure active exercise in the open air was enjoined;—carb. ferri., sulp. quina., and other tonics were also exhibited.

*Jan. 12th*, 1836. The father of the young lady this day informs me that her health is now perfectly restored, but thinks her mental vigour still slightly impaired, particularly her "memory of events."

Case V. Mrs. S., æt. 65, came to Louisville, to consult me about a neuralgic affection of the eye and circum-orbital region, with which she had been suffering most acutely for four months past. Saw her first in December 24th, 1835; she had been under the charge of other physicians since September last. She has been perfectly blind for four or five years in the affected eye, (the left,) from amaurosis. The eye presented the following symptoms: chronic inflammation of the conjunctiva and meibomian glands; cornea slightly vascular and nebulous; sclorotic coat also inflamed, (indicated in part by the violent circum-orbital pain;) iris discoloured and immoveable; great intolerance of light in the sound eye and epiphora; the inflammation and pain is of a purely intermittent or neuralgic character, being more violent every other night. The pain usually commenced at sunset, and continues until morning, of the most intense character. During the day it is less violent; but *even then* she has not for four months been entirely free from it.

"Tired nature's sweet restorer, balmy sleep," has been to her eyelids a perfect stranger.

The pain, she informs me, usually commences in a twig of the second branch of the 5th pair, coming out at the supra orbitar foramen, but sometimes in a branch of the first filament of the fifth pair, coming out at the superciliary ridge. It comes on very suddenly, and is most intolerable. During the paroxysm there is great intolerance of light and profuse discharge of tears. The feeling of sand

in the eye, (indicating conjunctival inflammation,) is also aggravated. I omitted to mention above an almost perfect paralysis of the upper eyelid, existing for some two or three months past.

Authors on diseases of the eye, would style this case catarrho-rheumatic-ophthalmia. Catarrho, from the similarity of the conjunctival influx to that of other mucous membranes, and rheumatic, from the close resemblance of the pain to that attending inflammation of the fibrous structures in other parts of the body. In the present case, the pain was certainly more truly neuralgic than rheumatic. The eyelids are very tender to the touch during and after the paroxysm of pain. She had some febrile symptoms, some throbbing of temples, and pain of head. Being of full robust habit, I drew about ℥xvj. of blood from the arm, and administered an active drastic cathartic. As a collyrium, I prescribed the following. ℞. Ox. muriat. hydrarg. grs. ii pulv. g. opii ℈i. aqua distillate ℥viij. ℳ. S. To be applied warm to the eye four times daily. To relieve the pain about the eye, I directed, ℞. Extr. belladonnæ ʒi. acet. morphiæ grs. x. tinct. opii q. s. ft. unguent. S. To be smeared over the eyelids and circum-orbital region three times daily, and particularly at night, should the pain return. Small pieces of adhesive plaster were spread with it, (i. e. except the margin,) and worn constantly over the foramina in the face, and orbit, which give exit to the nerves affected.

*Dec.* 25th. Much pleased to find my patient had passed the night comparatively free from pain and had enjoyed some hours of refreshing sleep. The eye exhibited less intolerance of light and epiphora. The *feeling of sand* being still troublesome, and the vessels of the adnata distended with blood, I prescribed the following. ℞. Nitrat. argent. grs. x. aqua rosa. ℥i. ft. solution. S. To be dropped into the eye, morning and evening.

At 4, P. M., cups were applied to the left temple; bled very freely; abstracted about ℥x. After the operation, I could perceive a diminution of the redness and distension of the vessels of the conjunctiva. Directed, ℞. Cal. ppt. grs. v., pulv. g. opii grs. iss., pulv. g. camph. grs. iii., conserv. rosar. q. s. ft. massa., en pillul. No. ii. divid. S. To be taken at 5, P. M.

*Dec.* 26th. Found the patient much better. In the natural course of the disease the paroxysm of last night would have been more violent than that of the night previous, but by the remedies it was entirely prevented. Continue treatment. Directed ung. hydrarg. nit. ox. to edges of lids at night, to correct disease of follicles and repress their secretion.

27th. Patient still improves. No pain during the night. Perceiving

some increase of the inflammation of the eye in the afternoon, I again applied cups to temple. Continue treatment. The cal. et opii, as usual, at night.

28th. Patient informs me that the circum-orbital pain came on about midnight, but much less violent than usual, and also that *seven* nights previous she had suffered an exceedingly violent attack, thus showing another striking point of analogy between the present disease and the common intermittents of the country, the paroxysms of which are so liable to return every 7th, 14th, or 21st day. Continue treatment.

Directed carb. ferri ʒi. three times daily—the cal. et opii, as usual, at night, giving a larger dose of opium every other night, to correspond with the violence of the expected paroxysm.

29th. Found the patient suffering slight ptyalism—no pain during night; no intolerance of light, nor epiphora; cornea more transparent; pupil irregularly dilated from the belladonna; ophthal. conjunct. much reduced; paralysis of eyelid much alleviated; the patient now having nearly perfect command over the voluntary motion, (probably the effects of the calomel.) Continue treatment, except an omission of the pills of cal. and opii.

30th. Still improving in all respects. Patient feels quite confident of ultimate escape from her most unwelcome nocturnal companion.

*Jan.* 3d, 1836. Returned to country, entirely relieved of the circum-orbital pain, and accompanying ophthalmia. Vision still gone from the left eye, and no reasonable prospect existing of relieving an amaurosis of four years duration.

*Zanesville, Jan.* 7, 1836.

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ART. XI. *Application of the Bandage in Gonorrhœa.* By S. W. DALTON, M. D., of New Orleans, La.

My attention was first called to the consideration and subsequent adoption of the method here proposed of treating gonorrhœa, when a student of medicine at Transylvania University in 1825, by the lectures of Professor Dudley, upon the use of the bandage in the treatment of local inflammation generally, wherever its application can be properly and equably made. But the peculiar appropriateness of the remedy more particularly struck me, from the remarks of that able professor, upon its use in paronychia and paraphymosis, where pressure gradually increased, even by the hand, for a few minutes, is

known to produce the happiest effects. From the analogous condition, in part, of these affections, to that above, induced me to propose its application in an obstinate case, which came under my notice at that time, and which had resisted the skill of the faculty for eighteen months. The bandage was accordingly applied with much care and equability, from the glands penis back to its dorsum, the penis itself being in a state of relaxation. It was then ordered to be immersed, from time to time, in a cold, saturated solution of the acetate of lead, so as to keep the bandage continually wet, which greatly attributed to the effect of the bandage in restraining those priapismal erections, so painful and harassing to the patient after sleep, as often to make him suddenly spring up in his bed. With the view, also, of promoting the same sedative effect upon the erectile tissue, and keeping the urethra clean, I directed the sulph. zinci and sacchar. saturn., of each two grains, to be dissolved in four ounces of rose or rain water, and used as an injection, three or four times per day; the patient confined to half diet, quietude, and his room. These instructions were rigidly observed, and the result was, that in forty-eight hours the disease was completely removed, a result equally gratifying to the hitherto unfortunate patient as it was flattering to his fortunate physician.

This method of treating gonorrhœa, is certainly novel, and also important, since it affords certain and prompt relief. I say certain and prompt, for such has been the uniform result of five or six years hospital practice, in the U. S. army, where I have had the very best opportunities of testing the value and certainty of this remedy. I can, therefore, recommend it, with every confidence of success, to the attention of my professional brethren. Indeed, I have often been told by gentlemen whom I have treated for this disease, that they now disregard it, as they find no difficulty in curing it in two or three days. It may be necessary, indeed important to the success of this remedy in the hands of others, that I should make some brief remarks upon the modus operandi of the bandage in the cure of gonorrhœa, and also give particular directions for its application. In regard to the former, I deem it only necessary to say, in general terms, that it prevents the reflux of blood into the cellular tissue of the penis, and keeps in a state of comparative paralysis or rest, that portion of the penis, which is the immediate seat of the disease; an object, certainly, of primary importance, in the successful treatment of every grade of inflammatory action, and constituting the basis of the method here proposed. The promotion of this object, as will readily be perceived, is also greatly facilitated by the evaporating solution

employed in conjunction with the bandage. As regards the application of the bandage itself, there is nothing peculiar or mysterious about it. Much tact, however, is requisite, in properly and successfully applying it. There is no instrument in surgery requiring a more skilful hand in its general applications than the bandage, and none, from the judicious and appropriate use of which, the enlightened surgeon can derive greater advantage to his patient, or credit to himself. In the particular case under consideration, the bandage should be a fine piece of old linen, about an inch and a half wide, and long enough to envelope the whole length of the penis two several times; the penis being as much elongated as possible without erection, beginning at the glands, which, first of all, should be covered with a light dossil of lint. The bandage should thus be placed in a longitudinal direction to the extent of an inch or two, upon the upper and anterior portions of the penis, thence passing it over the glands and underneath to a corresponding point to the end of the bandage above, and retained firmly in that situation by the thumb and index finger of the left hand, until by a change in the direction of the bandage; at this point at right angles, it is passed across the penis from below, upwards, enclosing and confining tightly the lint and end of the bandage to their proper place. The application of the bandage should then be continued with considerable tightness and perfect equability, as already directed. It is next immersed in the solution, which completes the dressing. All this, I will further observe, must be preceded, firstly, by urinating, if necessary, and then using the injection, as directed, which should be done carefully and with an ivory syringe, always looking well to the point of it, that it be perfectly clean. Thus, none of those unpleasant consequences need be apprehended, which, like all other abuses of valuable remedies, have brought the use of injections into bad repute among the profession generally, in application to the disease we have just considered.*

*New Orleans*, January, 1836.

*[We have unhesitatingly given insertion to the above method of treating gonorrhœa, inasmuch as the author claims *extensive experience*, the best test, in support of its efficacy. Nevertheless, we must confess, that the practice is so repugnant to our theoretical notions, that we would hesitate to resort to the practice unless we were to receive further evidence of its advantages in the hands of others.—Ed.]

ART. XII. *Case of malformation and spontaneous amputation of one of the lower extremities of a fœtus in utero.* By F. P. FITCH, M. D., of New Boston, N. H.

Sir—Having noticed in your journal, (No. 21, November, 1832,) "Observations on the spontaneous amputation of the limbs of the fœtus in utero," I am induced to communicate the following case of *malformation and separation of one of the extremities of the fœtus*, which has since occurred in my practice. Although I am unable to discover any connexion between the condition of the mother and the appearance that the child presented after birth, or to throw a ray of light upon the causes which operated in effecting the separation of the limb, yet, as instances of "spontaneous amputation" are, I believe, of infrequent occurrence, I shall relate briefly the more prominent features of the case throughout.

Mrs. ——, a healthy labouring woman, mother of six robust children, but who had suffered an abortion from injury in her last pregnancy, was alarmed, March 17th, about the sixth and a half month of gestation, by a sudden discharge of the liq. amnii. This discharge at first, though unattended by pain, was abundant, and continued in decreasing quantities forty-eight hours.

On the morning of the 21st, a substance escaped from the vagina, which was found to be a perfectly formed fœtal foot, apparently separated at the ankle joint, and in a state of complete preservation. At this time the abdominal tumour had greatly diminished; the fœtal movements within the womb were active, but no expulsory efforts had occurred. On the next day a slight uterine hæmorrhage supervened, which, on the 27th, had so much increased as to require attention. For three days the bleeding was arrested almost entirely; but at the end of this period, although there was yet no indication of an effort in the uterus to throw off its contents, while the woman was engaged, contrary to earnest entreaties, in severe exercise, the flowing was renewed, and the patient lost at a single gush, according to her own statement, "more than a quart of fresh blood." Faintness was induced, but by attention to prescriptions she was again made comfortable. In this condition the patient remained till the morning of the 5th April, when, after a labour of ordinary duration, she was delivered under circumstances of extreme danger from the excessive flooding that ensued. The cord was ruptured at the moment of delivery by a sudden movement of the mother, and was afterwards found to be unusually weak throughout its whole length.

The child exhibited signs of life more than half an hour after birth, and on examination presented the following condition:—It had attained full size for that period, (about the seventh month,) and was apparently vigorous. Situated a little to the left of the centre of the forehead was a horny protuberance, of the size of the middle finger, projecting about half an inch. Below, upon the face, was an extensive deformity, caused by the entire absence of the upper lip and bones beneath to a great extent. This last malformation the mother *very confidently* attributed to an accidental view of a person whose upper lip and part of the nose, had been destroyed by a cancerous sore. But what excited the greatest interest in this case, and, in connexion with the early discharge of the foot, gave origin to this communication, was the condition of the right lower extremity. As far as the knee joint this limb did not differ in appearance from its fellow, but at that point it terminated abruptly, and over the end the skin had contracted uniformly from every side towards the centre, without, however, forming a complete cicatrice. With these exceptions, the child was perfect.

It was fifteen days previous to the birth of the child that the foot, exhibiting no traces of decay, was passed from the vagina, without pain, and unattended by any sanguineous discharge; and it should be added, that, two days after delivery, a substance escaped which had every appearance of having been the portion intervening between the knee and ankle joint, but at that time in a stage of decomposition so advanced, that it could not be well examined. Upon the foot the place of separation was contracted to the size of a small pinhead, and the healing process had apparently been as perfect, and had progressed very nearly as far, as that on the lower extremity of the femur.

In the above case is presented a remarkable property of the impregnated uterus. As the contractions or healing upon the divided surfaces of the limb could not have been accomplished at once, it appears evident that in this instance the uterus not only preserved a detached portion of the fœtus from decay, but maintained its vitality also; nor is this supposition contradicted by the putrescent condition of another portion of the limb, as that had remained exposed to the warmth of the body and other influences two days after delivery of the child.

The mother recovered rapidly, and in eight months was suddenly delivered again of twins, one of which survived two, and the other ten days.

*New Boston, N. H., February*, 1836.

# REVIEWS.

ART. XIII. *On the Diagnosis of Diseases of the Chest; based upon a Comparison of their Physical and General Signs.* By W. W. GERHARD, M. D., Physician to the Blockley Hospital; Lecturer in the Philadelphia Medical Association; Fellow of the Philadelphia College of Physicians; Member of the Societé Médicale d'Observation, and of the Societé Anatomique of Paris, &c. Philadelphia, 1836.

We hail with peculiar pleasure the appearance of the above work. Coming, as it does, from the pen of one of our own countrymen, profoundly acquainted with the subject, it must necessarily exert a happy influence upon the cultivation of this branch of medical science amongst us. For, although the advantages of auscultation are now so clearly established that few can be found hardy enough altogether to deny its utility, still there are undoubtedly many physicians who are very far from appreciating its vast importance. Nevertheless, without a resort to this mode of exploration, the practitioner will find it in most instances very difficult, and sometimes impossible, to determine either the nature or extent of any disease of the chest which he may be called upon to investigate, and consequently to adopt with promptness and confidence the course of treatment best adapted to its alleviation or cure. But the advantages of auscultation do not stop here —it has far higher claims upon our attention, since it has been principally through its means that many new and interesting facts have been added to our science, and also that the general history of pulmonary diseases has been brought to a degree of perfection so far beyond what had been previously attained.

That the discovery of auscultation has been of the greatest utility in advancing our knowledge of diseases of the chest, no one can doubt who will take the trouble to examine their history as at present established, and compare it with the accounts of the older writers. He will find that there is no disease in relation to which we have not now a much more accurate and full detail of the symptoms than formerly, and also a far more correct estimate of their value in diagnosis and prognosis, as well as of their relations to the pathological conditions of the different tissues and organs.

It has been not unfrequently asserted that those who practiced auscultation were in the habit of depreciating the importance of the

functional and general symptoms of diseases of the chest. Whatever foundation there may have been for this remark in individual instances, as a general rule it is undoubtedly incorrect. To be convinced of this, we need only to look into the works of the most experienced auscultators since the time of Laennec. Let any one peruse the work of Louis on Phthisis, and he cannot fail to be struck with the unwonted attention which the author has given to the examination of the functional symptoms of the disease, and also with the great importance which he attaches to a proper consideration of them in the formation of an accurate diagnosis. It will be found that the condition of the digestive apparatus, of the nervous system, as well as of the muscular and cellular tissues, &c., has been investigated most minutely—that still greater attention has been paid to the examination of the character and seat of the pain, the kind of cough and nature of the expectoration, the alteration and loss of voice, the discharge of blood from the lungs, the modifications which pleuritic inflammation undergoes when occurring in a tuberculous subject, the connexion of pneumothorax with the same complaint, together with the dependence of chronic peritonitis upon the same general cause. These and a number of other circumstances attendant upon the disease, have been described with the greatest clearness and precision, and (which particularly concerns our present argument) most of them have been brought out in bold relief as diagnostic signs, and their importance as such established upon the firm basis of observation. The same general remarks will apply to the history of almost every other disease of the chest, as will appear by referring to the works of Andral, Bouillaud, and others. In fact, were the practice of auscultation from this moment abandoned, medicine would still remain greatly the gainer by the discovery of this means of exploration, on account of the many new facts with which our science has directly or indirectly been enriched through its means.

But, whilst admiring the general beneficial influence which the discovery of auscultation has exerted upon the progress of our science, we must not omit to impress upon the physician the importance of a practical acquaintance with it at the bedside of his patients. Indeed, no one can now be held excusable who omits to acquire this knowledge so far as circumstances will permit. As his acquaintance with the subject increases, he will find that diseases of the thoracic cavity present themselves to his mind under a new aspect—that many of the doubts and difficulties which he had formerly laboured under with regard to the diagnosis of these diseases will vanish—that he will be able in individual cases to follow the disease from stage to stage, and appreciate, with a certainty which he could not previously have thought possible, the various changes which the pulmonary tissue undergoes from day to day in its progress towards a favourable or unfavourable result.

The importance of diagnosis is generally very much undervalued in this country, partly perhaps owing, so far as regards inflammatory diseases, to our attaching too exclusive an importance to the study of the

nature, symptoms, and treatment of inflammation in general, without sufficiently considering the important modifications which it undergoes in many respects, according as it is seated in one or other of the organs or tissues of which the body is composed. All the knowledge which we possess of the general doctrine of inflammation, and of the functions and properties of the different organs and tissues, would never enable us to determine á priori, most if any of the modifications above alluded to; an acquaintance with which, in fact, can only be acquired by a patient and careful investigation of all the phenomena which accompany each separate lesion. In confirmation of the above remarks, let us look for a moment at a few of the prominent features of two of the most important acute inflammations occurring within the thoracic cavity, viz. pleurisy and pneumonia. The former, when attacking an adult not very far advanced in life, and who at the time of invasion is free from any chronic disease of the chest, is an affection of no very grave character, and which will almost necessarily terminate favourably, without the employment of any active treatment, by a simple attention to diet and regimen. To secure the most rapid and favourable termination possible, it is only necessary in addition to this to make use of moderate depletion, combined with the external application to the side affected of such substances as are calculated to favour the absorption of the liquid effused into the cavity of the pleura. Reasoning á priori, we should have come to an exactly opposite conclusion, and classed simple pleurisy among the most violent and fatal diseases, because the inflammation of serous membranes generally possesses this character. Pneumonia, on the contrary, is a disease of the most serious importance—is frequently characterized by the most violent symptoms, especially in its latter stages, when the cerebral functions are much impaired—and demands the most energetic treatment. Perhaps there is not in the whole catalogue of diseases to which we are liable, one in which it is so important to make use of large and frequently repeated bleedings, and that too in the very early stage of the complaint. Now, it is absolutely impossible in a considerable proportion of the cases of pneumonia, that the treatment so important to the welfare of the patient can be confidently pursued unless auscultation and percussion be employed as a means of diagnosis; for the inflammatory condition of the lungs constituting pneumonia is sometimes accompanied with such slight functional disturbance of those organs, that without the aid of the physical signs the practitioner would remain ignorant of the nature of the disease until revealed to him by a post-mortem examination. Many other cases also occur in which, without the same assistance, it would be difficult, not to say impossible, to arrive at a certain diagnosis during the early stage of the disorder, the moment of all others when it is of the greatest consequence to employ with promptness and energy the most active remedial means. Moreover, the treatment generally requisite is one which would be entirely unjustifiable, were the inflammation confined to the pleuræ or the bronchial mucous membrane.

The object of Dr. Gerhard in the work, the title of which we have

placed at the head of this article, is to lay before the reader a concise view of the most prominent symptoms of each one of the numerous diseases of the chest—to give a more detailed account of their physical signs, and to indicate the several conditions of the thoracic viscera with which these are inseparably connected, thereby presenting the data by a careful comparison between which the diagnosis is to be determined.

In the introductory chapter, which is devoted to a few remarks upon the relative importance of the physical and functional signs, the author makes the following observation:—"Diseases of the lungs may be recognised tolerably well by the rational signs alone; but it is as unwise in a physician to reject the aid of auscultation, as it would be in a surgeon to despise the use of the sound"——

We entirely assent to the truth of the above proposition in the greater proportion of cases; but, at the same time, we believe that very few are able so to recognise them in most instances, unless they have acquired that precise knowledge of the rational signs which is only to be obtained by a careful study of these diseases with the aid of auscultation and percussion.

In the second chapter, we have a short account of the conformation of the chest, and of the mode in which ocular examination should be performed. The morbid changes which take place in the external conformation of the chest are very various, and frequently afford very important assistance in the diagnosis of its diseases, and for this end it is necessary that they should be examined with the most scrupulous accuracy. The author's account of this subject is chiefly derived from the instruction of Louis, and is particularly worthy of a careful perusal, as it notices several alterations of form, in general but little understood or appreciated.

The four following chapters contain a description of the sounds which auscultation and percussion will enable us to distinguish, and of the mode in which these operations can be best performed. As this description, except in one particular, does not essentially differ from that usually given, we shall dismiss its consideration with a few remarks upon the part alluded to.

It has been known for some time to several auscultators, that the respiratory murmur was, under ordinary circumstances, more harsh and blowing under the right clavicle than under the left. A knowledge of this difference is of great importance in the examination of an individual in whom the existence of tubercles at a very early stage is suspected, otherwise we might sometimes be led to suppose that there was a small deposit of these bodies at the summit of the right lung, when in fact it was perfectly healthy. Of the causes of the difference alluded to, we think that the author has given a very satisfactory account. Starting from the well known anatomical fact, that the right bronchus is shorter, more horizontal, and of much larger diameter than the left, he has pointed out a circumstance familiar perhaps to few except professed anatomists, viz. that the bronchial tubes distributed to the right superior lobe are, even after they have pene-

trated some distance into its substance, of considerably greater diameter than the corresponding ones on the left side. This circumstance, taken in connexion with the fact that the former have a much more direct communication with the trachea, owing to the horizontal course of the right bronchus, is, he thinks, entirely sufficient to account for the difference of sound under the two clavicles. The explanation is novel and ingenious.

The history of the bronchial respiration is very clear and full. He has divided it into three kinds, viz. the rude, the bronchial, and the tubal. The rude respiration was first noticed by Louis, and differs from the true bronchial; the vesicular murmur being still present, though in a slight degree in the former. This mode of respiration is particularly observable in the early stages of phthisis. The tubal respiration does not essentially differ from the bronchial, but is merely an exaggerated form of it, and we doubt the necessity of treating of it separately.

The remainder of the work is chiefly occupied with the consideration of the different diseases of the chest. In tracing the history of emphysema of the lungs, the author remarks that

"The conformation of the chest is altered; the distension of the lung, which is increased by the efforts made by the patient in the act of respiration, gives rise to permanent enlargement of the thorax. The dilatation is of two kinds—one is the rounded form given to the thorax of emphysematous patients by the strong efforts of respiration. This general dilatation is not confined to a portion of the chest near the enlarged vesicles, and is, therefore, probably owing to the strong efforts of inspiration, and to the imperfect expiration characterizing the disease."

We very much doubt the truth of this opinion, because a general dilatation, strictly speaking, is very rare in this disease; and, in fact, in the immense majority of cases, the enlargement is confined to a portion of one side only. It is stated by Dr. Louis,* that "of forty-five cases of emphysema in which he had studied the configuration of the chest with care, one only presented a general change of form—and that in all the others the dilatation of the thorax was partial, and was confined to one side of the chest, except in four cases.

As regards the situation of this dilatation, Dr. G. contents himself by stating that it is generally found over the anterior margin of the lung, on each side of the sternum. This is hardly sufficiently precise, for, although its seat is not always the same, it commonly begins under one of the clavicles, and extends downward towards the mamelon, and is from three to six inches broad.

There is still another alteration of form, not spoken of by Dr. Gerhard, and which occurs above and behind the clavicles. It consists in the partial or entire obliteration of the supra-clavicular depression, in place of which there is sometimes an absolute prominence. This prominence is also commonly confined to one side of the chest, and is particularly important as a means of diagnosis, because it is found in almost every case of emphysema of the lungs, and is never an attendant upon any other disease, so that its existence alone is sometimes suffi-

*Dict. de Medecine. 2nd edition. Vol. XI. p. 348.

cient to determine the nature of the affection. Previous to the time of Laennec, emphysema of the lungs was hardly known; and even until very lately it received but little attention. It nevertheless possesses great interest and importance, not only on account of the many interesting facts which its history presents to our notice, but because it may be confounded with the early stage of phthisis by those who are not well acquainted with its symptoms; an error which it is of the utmost importance to avoid, as both the prognosis and treatment are very different in the two diseases. In many cases this disease developes itself in a *slight degree* during childhood, but, in its severe form, it is almost, if not entirely, confined to adults. This is perhaps all that Dr. G. means to say, when he states that it is "very rare in children," for with them it hardly ever shows itself in a form requiring the attention of a physician; nevertheless, it has been clearly proved, we think, by recent investigations, that in many instances, and particularly where an hereditary predisposition to the complaint exists, its first symptoms may be traced to very early life. Chronic bronchitis is almost always an attendant upon emphysema in some part of its course, but the latter is frequently developed before the former makes its appearance. Laennec was of opinion that the dilatation of the vesicles was in most cases produced mechanically, owing to the difficulty with which the air is expelled from the lungs in certain forms of bronchitis, but the frequent occurrence of this dilatation in persons who have not previously been affected with catarrh renders it probable that this opinion is far from correct.

When alluding to the diseases with which emphysema may be complicated, the author makes the following important observation:—

"Tuberculous consumption is not very often connected with this lesion; the two diseases seem, in some degree, to counteract each other, and patients afflicted with the one are rarely attacked by the other."—page 77.

This is an exceedingly interesting fact, and one which, we think, has lately been clearly established. It seems to lend some support to the observations of a late British writer, who states that he has sometimes succeeded in curing phthisis in its earlier stages, by causing the production of an artificial emphysema. He asserts that, when this effect has been produced, the further secretion of tuberculous matter has been suspended, and the patients have been gradually restored to health.

The 9th chapter contains a full and clear description of the diagnostic characters of pneumonia, and also some interesting remarks upon the varieties which it presents, according to the age of the patient, and especially upon that form which occurs in children under six years of age. This last is called lobular pneumonia, and, for its more complete elucidation, the profession is much indebted to the researches made by Dr. Gerhard during his residence at the *Hôpital des enfans malades*, at Paris. Some of these have been detailed in a former number of this journal. In the present work we have a short summary of the most prominent features of the disease. The following

extract will sufficiently show its great importance, as well as the wide difference between it and ordinary pneumonia.

"The disease is almost always double, and begins at the lower lobes of both lungs, extending from them to the upper lobes, along the posterior margin of the thorax. It is rarely complicated with pleurisy. This variety almost always succeeds to chronic catarrhs, or other diseases, as the exanthemata, &c.; it, therefore, has not a definite duration. There is no expression of pain, no expectoration, and sometimes no cough; but the disease is in a great degree latent, and notwithstanding its extreme frequency, is often mistaken. There is not always a rhonchus, but where the disease succeeds to catarrh, a mucous or sub-crepitant râle is heard. Bronchial respiration is never so distinct in this disease as in idiopathic pneumonia, and scarcely ever becomes tubal; it is best heard at the root of the lungs," &c.

The symptoms of this variety should be well understood by every practitioner, also the circumstances under which it is most likely to occur, so that he may be on his guard and prepared to appreciate its earliest symptoms. It frequently attacks children who have been labouring previously under any of the exanthemata, whooping cough, &c.

The pneumonia of aged people, like that of children, is very frequently latent, and is to be recognised principally by the physical signs.

In speaking of the physical signs of ordinary pneumonia, Dr. Gerhard has laid great stress upon the value of bronchial respiration, which is usually described as belonging exclusively to the second stage of the complaint. This is true only of the most perfectly formed and pure bronchial respiration; whereas, as Dr. G. observes, an imperfect bronchial or rude respiration is one of the first signs discoverable by auscultation, and is frequently developed before the crepitant rhoncus is observed.

These two sounds are found occurring together and in the same part of the lung in the first stage of pneumonia, as we have frequently had opportunities of observing, and under these circumstances the existence of the one serves to throw light upon the character of the other.

Dr. G. has treated of gangrene of the lungs as a disease entirely distinct from pneumonia, and not as one of its terminations. Some physicians are of opinion that idiopathic gangrene of the lungs is not preceded by any inflammatory action in the part affected; but whether this be true or not, it is quite certain that when this lesion occurs, the disease is generally characterized from its commencement by symptoms very different from those of ordinary pneumonia. It bears, in fact, a strong analogy to malignant pustule and other diseases essentially gangrenous. The general symptoms are of much greater value than the physical signs in the diagnosis of this affection. It is usually accompanied with great prostration and anxiety, the skin is of a dirty yellow colour, and the sputa have a peculiarly offensive and fetid odour; this last sign is pathognomonic. If the ear is applied to the chest over the part affected, a mucous rhonchus is heard during the early stage of the complaint, and at a later period a loud

gurgling is found, accompanied sometimes with cavernous respiration and pectoriloquy.

Phthisis is next treated of. The alterations of structure which take place in the lungs of phthisical patients, are first described, and, afterwards, the physical signs connected with the several alterations spoken of.

Our author observes that "these (the physical signs) necessarily vary with the different stages of the disease."

"In the first stage, when there are but few scattered tubercles, it is impossible to ascertain their existence by physical examination. When the tubercles are more numerous and larger, and the disease is fully formed, though it should not yet have passed into the second stage, the physical signs become evident."—page 105.

There is a degree of obscurity in the remarks quoted, which might lead to the supposition that the physical signs were of little importance, except in cases where the disease was considerably advanced, and approaching its second stage. This idea, is, we think, incorrect, and one which, most probably, the author did not intend to convey, for shortly afterwards he observes that "as they [tubercles] are both more numerous and are developed at an earlier stage at the top of the lungs, a small number will give rise to considerable local alteration of the respiration.—page 105.

Hence, it would seem reasonable to conclude that the first stage of the disorder should in a majority of cases be marked by decided physical signs, and this, we believe, is in accordance with experience.

In speaking of the alterations of respiration in this stage, Dr. G. makes mention of only one, viz. the increase of the blowing sound; but this is by no means the only one which is observed, for the respiratory murmur is frequently diminished in intensity immediately under one or both clavicles, where there is also sometimes heard a confused sound, very different from that produced by the regular open expansion of a healthy lung. By a singular oversight, also, the obscurity of sound upon percussion, in the same part, has been left rather as matter of inference than directly expressed. Nevertheless, this slight obscurity on percussion is one of the most important signs at this period, especially when considered in connexion with the alterations of the respiration above alluded to.

The physical signs of the second and third stages are well described. The author next proceeds to consider the conformation of the chest—the character of the cough and expectoration, the general emaciation, &c.—so far as they are valuable as means of diagnosis. He lays much stress, and with justice, upon the occurrence of hæmoptysis, which has been incontestibly proved to be an almost certain sign of the existence of tubercles, except in cases where the spitting of blood follows upon injuries of the chest from external violence, or is connected with some derangement of the menstrual function.

Pulmonary consumption is generally accompanied in some part of its course by lesions of other organs, which give rise to their peculiar train of symptoms; and as some of these lesions are developed occa-

sionally in the very early stage of the disorder, their occurrence in particular instances is sometimes of material assistance in forming our diagnosis. Their value, in this point of view, depends upon their necessary connexion with the existence of tubercles.

"From the very constant and early deposit of tubercles at the summit of the lungs, an examination of the physical signs of these organs will often throw much light upon the tuberculous diseases of other viscera, and especially those of the serous membranes. On the other hand, a knowledge of the laws governing the deposit of tubercles in different organs of the body, will facilitate the diagnosis of obscure cases of pulmonary consumption. The chief of these laws, (for which we are indebted to M. Louis,) are as follows, &c." p. 117.

We shall merely allude to two or three by way of illustration. In adults, whenever tubercles are developed in any of the organs of the body, they exist at the same time in the lungs. The exceptions to this law are exceedingly rare. Another is, "that chronic peritonitis, which does not follow the acute form is always tuberculous," *i. e.* that chronic peritonitis, which has come on gradually, and has always from the *commencement* presented more or less of a chronic character, is necessarily dependent upon the formation of tubercular matter in the peritoneum or its immediate neighbourhood.

If we consider these two laws in connexion with one another, it will be evident that the occurrence of chronic peritonitis in the form which we have described, is a certain sign of tubercles in the lungs. We have seen Dr. Louis diagnosticate phthisis by this means, even where cough and every other symptom referrible to derangement of the respiratory organs was absent; and, moreover, have seen the diagnosis uniformly verified by the subsequent course of events.

According to our author, the disease of children known under the name of meningitis, or meningo-cephalitis, is always connected with tubercular deposits in one or more of the organs of the body. This conclusion he arrived at during the course of a series of observations made at the infant's hospital in Paris.

In giving a summary account of the diagnosis of phthisis, Dr. G. has enumerated a variety of circumstances in which it differs from chronic catarrh, and immediately afterwards observes, that "when two or more of the general signs just mentioned are combined, they indicate the probable existence of phthisis, especially if they do not appear to be dependent upon other diseases." p. 120.

We really are at a loss to understand the author's meaning in the above remark, for the general signs alluded to are mostly of a character calculated only to render more probable a diagnosis already partially formed upon other grounds, and so far from two of them combined "indicating the probable existence of phthisis," the simultaneous occurrence of the first seven would hardly do so unless accompanied by local symptoms indicating disease of the respiratory organs. We think that the author would have given a much more complete and clear view of the subject, if, besides pointing out the value of each of the signs and symptoms considered in an isolated manner, he had collected them into groups, and indicated the greater

or less degree of probability, or the absolute certainty, which each of these several combinations afforded in the diagnosis of the disease.

It will be unnecessary to examine in detail the histories of the remaining diseases of the chest. Enough has been said to enable the reader fully to comprehend the object of the author, and to understand the mode in which the work has been executed.

It is impossible to convey to the mind an accurate idea of the different sounds derived from auscultation of the chest, through the medium of description alone. This knowledge is best acquired in a large hospital, where the student has the opportunity of frequently applying his ear to the chests of patients previously examined by an experienced auscultator, who at the same time points out to the pupil the character of the sounds observed in each particular case.

But as this mode is completely without the reach of the greater proportion of the profession in America, the author has endeavoured to supply to a certain extent this deficiency in the concluding chapter of the work. He has there enumerated the types of the different sounds, and pointed out certain marked conditions of the system, in which they will be almost certainly found to exist. These cases present themselves from time to time, in the practice of every one; and when they do occur, the physician should carefully examine the chest, and he will be almost certain to find the type of one or more of the four principal sounds. After having repeated this several times, he will, with attention, have acquired an accurate idea of these types, and from thence proceed to the study of their modification with comparative ease.

Upon the whole, we think that the work of Dr. Gerhard is one of the best productions of the kind which we have seen. In many respects it is more full and complete than any which have been hitherto offered to the public. The author has brought to the task a thorough practical acquaintance with the subject; and, moreover, from his knowledge of the present state of medical science abroad, he has been able to embody in his work some of the latest discoveries of the most celebrated European physicians. It is entirely unencumbered by the least unnecessary detail, every thing at all foreign to the subject being carefully excluded; but, at the same time, perspicuity has been sometimes sacrificed to this disposition to render it as concise as possible, and this defect has been further increased by a negligence in the choice of words, and, in fact, a general inattention to clearness and beauty of style, but too common in medical productions. Had the author more fully elaborated his ideas in many places, the value of the book would have been materially enhanced. We hope that the hints which we have thrown out may not be forgotten on a future occasion.

T. S.

ART. XIV. *Researches on the Effects of Blood-letting in some Inflammatory Diseases, and on the influence of tartarized antimony and vesication in pneumonitis.* By P. Ch. A. Louis. Translated by C. G. Putnam, M. D. With preface and appendix, by James Jackson, M. D., Physician of the Massachusetts General Hospital 1 vol. pp. 171. Boston, 1836.

This is the last of Louis's publications which has reached this country. It is the only one, so far as we know, which has been honoured with an American translation. We do not hesitate in pronouncing it one of the most important medical works of the present century; and it is so on two accounts. In the first place, it is important for the new and positive knowledge which it gives us in relation to the treatment of some diseases. In the second place, and more espepecially, it is important as the first formal exposition of the results of the only true method of investigation in regard to the therapeutic value of remedial agents. It might have been supposed, that in the course of some thousands of years, during which blood-letting has been almost universally resorted to in the treatment of certain acute inflammatory diseases, the actual efficacy of this operation would have been clearly and precisely determined. Amid the chaos of jarring and ever changing opinions concerning the properties and application of *all* the articles of the materia medica, physicians had laid the flattering unction to their souls, that the effects of blood-letting in the cure of simple acute inflammation of the lungs, occurring in adult subjects, free from any other disease, were absolutely and accurately known. Here, at least, they had supposed themselves standing on solid ground. Now and then, to be sure, in the lapse of time, and here and there, over the wide and cultivated realms of medical science, might be heard a solitary voice, uttering its anathemas against the murderous practice, and proclaiming that the day of sthenic diseases had gone by. But, with a few exceptions, and with some slight differences of opinion, the real value of this ancient therapeutic measure in the treatment of the disease spoken of above was considered as definitively settled. How far, and precisely how far, this opinion is correct, remains yet to be ascertained. Like most other subjects of prominent and practical importance in our art, it is undergoing, and is destined to undergo, a more severe and rigorous scrutiny than any to which it has hitherto been subjected. The first fruits of this investigation are contained in the book before us, and, deferring some further observations on the different topics suggested by the work itself to the close of this notice, we shall present to our readers, in as concise a form as possible, the conclusions to which Louis and Professor Jackson have arrived.

The first series of cases of pneumonitis or of pleuro-pneumonia, analyzed by Louis, was observed at La Charité, between the years 1821 and 1827. The cases were seventy-eight in number, twenty-eight of which were fatal. The subjects of them were all in perfect

health at the time when the first symptoms commenced. The following tabular view exhibits the relation between the length of the disease on the one hand, and the period of the first bleeding, together with the number of its repetitions, on the other.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 10 3 | 7 3 | 19 3 | 19 3 | 28 2 | 13 1 | 24 2 | 19 2 | 35 1 |
| 12 2 | 10 2 | 29 3 | 12 2 | 17 3 | 16 2 | 12 4 | 12 1 | 11 2 |
| 14 2 | 12 2 | 20 2 | 15 2 | 40 2 | 23 3 | 19 2 | 18 1 | 17 2 |
| | | 20 | 22 4 | 13 2 | 35 5 | 18 2 | 20 3 | 30 3 |
| | | 16 3 | 12 4 | 21 2 | 17 2 | 15 2 | 13 2 | |
| | | 17 4 | 21 2 | 13 2 | | 27 2 | 21 2 | |
| | | | 25 3 | | | | | |
| | | | 28 4 | | | | | |
| | | | 40 2 | | | | | |
| | | | 16 2 | | | | | |
| | | | 12 4 | | | | | |
| 12 $2\frac{1}{3}$ | 10 $2\frac{1}{3}$ | 20 3 | 20 8 | 22 2 | 21 $2\frac{3}{5}$ | 19 $2\frac{1}{3}$ | 17 2 | 23 2 |

The figures upon the horizontal line above the columns indicate the day when the first bleeding was performed; the figures on the left in each column mark the duration of the disease; those on the right the number of bleedings; and those on the horizontal line below show the mean duration of the disease, and the average number of bleedings.

An examination of the foregoing table would, at first sight, lead to the conclusion that the abstraction of blood during the first two days of pneumonitis, had very much abridged the duration of the disease, while, after these two days, it would seem to make but little difference whether blood-letting was commenced a little sooner or a little later.

"But the amount of difference which exists between these two results, leads us to suspect their exactness; and a thorough examination does in truth show, that the influence of bleeding, when performed within the two first days of the disease, is less than it seems to be at first sight, and that in general its power is very limited.

"Indeed, among the cases of the same column in which the antiphlogistic treatment was instituted on the same day, (those of the first and second excepted) the duration of the disease exhibits the greatest variety. Thus in the fourth column, some were convalescent on the twelfth day, others (not to take the extreme) the twenty-fifth and twenty-eighth. This we cannot attribute to the violence of the disease, which was the same; nor to the difference of the treatment, which was equally energetic, and directed by the same physician. Whence it seems to result, rigorously, that the utility of bleeding has been very limited in the cases thus far analyzed.

"Differences no less considerable in the length of the disease would unquestionably have existed among the cases bled within the first twenty-four or forty-eight hours, if their number had been greater. And on the same supposition, the difference of the mean duration of pneumonitis, in subjects bled the two first days, and those who were bled at a later period, would have been less considerable. So that we should get nearer the truth, should we estimate the real difference effected in the progress of the disease by the greater or less promptness with which we have had recourse to bleeding, by taking the mean duration of the disease on the one side, in the cases bled during the four first days: and on the other, in those who were not bled until the fifth to the ninth inclusive. And then the

mean duration of pneumonitis would be seventeen days among the first, and twenty among the second.

"But the average given by the table is probably still a little too favourable in respect to the patients bled within the two first days, for another reason; to wit, that, not having committed any error of regimen before the bleeding, these patients were in a condition the most favourable for treatment; this was not the case with those in whom blood-letting was employed at a later period, and among whom many in each group had committed errors in regimen; some had taken strong drink, such as hot sweetened wine, one or many days in succession, in a greater or less quantity; some had even taken brandy. The length of the disease must certainly have been increased by these errors."

The average age of the patients bled before, and of those bled after the fourth day, was nearly the same. It was thirty-three years in the first set, and nearly thirty-six in the other. Neither was there any considerable difference in the severity of the disease in the two groups of cases. In establishing the duration of the disease, the commencement was dated from the period when the patient experienced a more or less violent febrile affection, followed or accompanied by pain on one side of the chest, and by rusty sputa; the time of convalescence was fixed at the period when the patient began to take some light nourishment; three days at least after the febrile action had ceased; although the local symptoms had not disappeared in every case; that is to say, at a period when percussion of the chest did not always elicit a perfectly clear sound at the part affected, and when the respiration was not very pure, the ear still discovering here and there some crackling and traces of crepitation.

"The facts relative to the fatal cases confirm these conclusions, and seem still further to limit the utility of blood-letting. Out of twenty-eight cases in question, eighteen were bled within the four first days of the disease, nine from the fifth to the ninth; and if on the one hand, we take together all the patients who were bled for the first time within the four first days of the pneumonitis, whatever may have been its termination, and on the other hand all those who were bled at a later period, we have, in the order indicated, on one side, forty-one cases, of which eighteen, or about three-sevenths, were fatal; and on the other, thirty-six, of whom nine, or only one-fourth, were fatal: a startling and apparently absurd result; the explanation of which is found, to a certain extent, in the following table. This table, which relates to the fatal cases only, shows in each of the columns from left to right, the duration of the disease, the number of bleedings, and the ages of the patients; whilst the figure above each column indicates the day when the first bleeding was practised.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 6 5 18 | 53 5 65 | 4 1 57 | 29 2 19 | 16 4 58 | 52 4 20 | 20 2 68 | 25 1 40 | 22 1 50 |
| | 12 3 69 | 16 2 54 | 29 4 46 | 8 2 36 | 10 2 40 | | | |
| | 8 2 65 | 6 3 30 | 12 1 85 | 9 4 24 | 29 3 24 | | | |
| | 12 1 55 | 6 4 47 | 15 3 37 | | | | | |
| | 17 7 75 | 47 2 75 | 17 1 67 | | | | | |
| | | 11 4 45 | 20 3 22 | | | | | |
| 6 5 18 | 20 3⅗ 66 | 15 3 51 | 20 2¼ 49 | 11 3 48 | 33 3 28 | 20 2 68 | 25 1 40 | 22 1 50 |

"We see, in effect, that the patients who were bled within the four first days of the disease, with the exception of one in the first column, who was eighteen years of age, were older than those who were not actively treated until after this period, in the proportion of fifty-one to forty-three years: this difference may not seem great, but it may have had great influence on the issue of the malady. Indeed the difference in question, that of age, is much less, if, taking the fatal and suc-

cessful cases indiscriminately, we add together on the one hand all the patients bled within the four first days; and on the other those who were not bled until a later period; for we then find that the mean age of the first class is forty-one, and that of the second, thirty-eight. But it is nevertheless true, that the number of patients bled on the first day, who had passed the age of fifty, was nearly twice as great as that of the patients of the same age, who were bled at a later period. This must have had great influence on the mortality.

"But it is not enough to have studied the effects of blood-letting upon the progress and termination of the disease; its influence on each particular symptom must be separately investigated. Let us begin with pain.

"*Pain* was not arrested by blood-letting in any of the cases bled within the four first days of the disease. On the contrary, it generally increased during the succeeding twelve or twenty-four hours: and its mean duration, usually in proportion to that of the disease, was six days among those who were bled during the four first days; eight and a fraction among those bled at a later period. It yielded more readily to local than to general bleeding.

"The *sputa* regarded as characteristic, were *adhesive, rusty, or like apricot jelly, and semi-transparent:* the mean duration of these sputa varied like that of the pain, or nearly so; being five days in patients bled within the three first days, six in those bled within the three following, seven in cases where the bleeding was from the seventh to the ninth day inclusive.

"The morbid character of the sputa became more distinct after bleeding, in the greater part of the cases in which it was employed at the onset of the disease. On the contrary, the sputa were less morbid on the day following the bleeding among the patients who were not bled until a late period.

"It seems to me, this can only be explained by admitting that the disease had approximated its natural termination in this group, and that it was more or less distant from it in the other. An important fact, which explains the difference of the effect of bleeding in circumstances which are similar only in appearance, and which shows, with many others of the same kind, that we probably do not arrest inflammations at once, as is very generally believed.

"As it regards *crepitation, resonance of voice, ægophony, and dulness on percussion*, their ordinary length varied like that of the preceding symptoms; that is, in the cases bled at a very early period, they were still more prominent, during one or more days after the first bleeding, than they had previously been; whereas they diminished rapidly after the first bleeding when this was employed at a later period; at least in the majority of cases.

"The *acceleration of the pulse* continued four, five, six, seven days and more after the first bleeding, in the cases bled from the first to the sixth day of the disease. Sometimes it even increased from one day to another, between two bleedings. The effect of bleeding upon the pulse seemed more decided when we practised it later than the period indicated. That is to say, in a considerable number of cases of this kind the pulse became calm, three days after the venesection; much more rarely not until four or five days. This undoubtedly depended, as was before remarked, with regard to the sputa, upon the circumstance that the bleeding was practised near the time when, in the natural course of the disease, the pulse was about to resume its natural state.

"As was the case with the quickness of the pulse, the *heats and sweats* diminished rapidly after the letting of blood, only when it was done at a certain interval after the commencement. The sweats continued longer than the heat, and lasted proportionably longer than the other symptoms in those individuals who were not bled for the first time until six days after the commencement of the disease.

"Thus, the study of the general and local symptoms, the mortality and variations in the mean duration of the pneumonitis, according to the period at which blood-letting was instituted, all establish narrow limits to the utility of this mode of treatment. Should we obtain more important results, if, as is practised in England, the first bleeding were carried to syncope?

"This practice deserves a trial, but great success cannot, I think, be anticipated; since many cases, the history of which I have drawn up, and which were fatal, were bled to a sufficient extent. Among these there was one who was bled on the day of the attack, and who nevertheless died on the sixth; the vein having

been opened five times, and the quantity of blood lost twelve or sixteen ounces each bleeding."

From 1830 to 1833, twenty-nine cases, suitable for analysis, were observed by Louis at La Pitié. Four of these were fatal. The bleedings in these cases were somewhat more copious than in those observed at La Charité, and the remaining treatment was different in some respects. In the group of patients who were bled for the first time, from the second to the fourth day inclusive, the mean duration of the disease was fifteen days and a half; in those who were not bled till after the fourth day, the mean duration was eighteen days and a quarter, leaving a difference between the cases treated at La Charité and those treated at La Pitié, in favour of the latter. Antimony, in large doses, was taken by many of the patients at La Pitié, while blistering was resorted to at La Charité, but not at La Pitié. As it is our principal purpose in this review to exhibit the results of Louis's and Jackson's investigations in regard to the effects of blood-letting, we must refer our readers to the book itself for their very interesting and important conclusions in regard to the value of other remedial means in the management of pneumonitis. So far as blood-letting is concerned, the following are the results of Louis's researches:

"1st. That blood-letting has a happy effect on the progress of pneumonitis; that it shortens its duration; that this effect, however, is much less than has been commonly believed: but that patients, bled during the four first days, recover, other things being equal, four or five days sooner than those bled at a later period.

"2nd. That pneumonitis is never arrested at once by blood-letting; at least, not on the first days of the disease. If an opposite opinion is maintained, it is because this disease has been confounded with another; or because, in some rare cases, the general symptoms rapidly diminish after the first blood-letting. But then the local symptoms, crepitation, &c., for the most part, continue to be developed not the less for this evacuation."

We shall now give the results of Dr. Jackson's analysis of cases of pneumonitis, treated at the Massachusetts General Hospital, so far as the effect of blood-letting is concerned. The period during which the cases were observed, extends from April, 1825, to May, 1835; and the number amounts to thirty-four. Of these thirty-four cases, three are considered by Dr. Jackson as somewhat exceptionable; we shall, therefore, in the following statements, exclude these cases from our calculations.

In three cases, venesection was performed on the first day of the disease. The average duration of the disease in these cases was $13\frac{1}{3}$ days. The number of bleedings was four times in each case. The average quantity of blood abstracted was $61\frac{1}{3}$ ounces to each case. In fifteen cases, bled for the first time on the first, second, or third day, the average duration was $12\frac{1}{3}$ days. The same thing is true, with a minute fractional difference only, of twenty-one cases in which blood-letting was practiced on or before the fourth day of the disease. In five cases, bled for the first time after the fourth day, the average day of convalescence was the $13\frac{1}{5}$. The average duration of the disease in these twenty-six cases was very nearly $12\frac{1}{2}$ days.

There were five cases in which blood-letting was not employed,

except that in one of them six leeches were applied. The mean duration of the disease in these cases was 14⅔ days. The results of these accurate data show that by bleeding on or before the fourth day, the disease is abridged in duration nearly one day, when compared with the cases in which this remedy was not resorted to till after that period. Compared with those who were not bled, it was shortened a little more than 2¼ days.

"But this," says Dr. Jackson, "would be representing the subject in a light sufficiently favourable to the cause of our remedy; for, in truth, the cases in which blood-letting was not employed were much less severe than the others, taking an average on each side. So that the advantage derived from blood-letting in our practice is greater than that derived from the same treatment in the hands of M. Louis. It may be suspected that this difference is to be attributed to the other treatment employed by us. When all our statements have been made this opinion will not appear very tenable. The average period for all our thirty-four patients taken together was 13 9-34, or 13.26. This is much less than for the cases reported by M. Louis. For this great difference, I think the most probable explanation is that our hospital is much smaller than that of La Pitié; that the comfort of the patients is provided for in every respect better than in the larger European hospitals; and that, especially, there is always preserved in our hospital a higher temperature than in the Paris hospitals. If there be exceptions to this remark among the hospitals in Paris, La Pitié is not one of them, unless I have been misinformed."

It is perfectly obvious, that in order to appreciate accurately the effects of blood-letting in the foregoing cases, all the circumstances which could in any way influence the disease must be taken into consideration, and the real importance of each and every one, as far as possible, determined. This has been done to a considerable extent, both by Louis and Jackson, in the work under review. The operation of blisters, for instance, is investigated by both these gentlemen. Dr. Jackson uses in the treatment of his cases calomel, colchicum, and opium. The circumstances of age, sex, and severity of disease, must also be regarded. The very important subject of temperature will be noticed in the above quotation from Dr. Jackson as one deserving great attention. In connexion with this single point we may state, that Dr. Jackson found his patients to have an early convalescence in proportion as they entered the hospital early after the commencement of their disease. Thus, of nineteen patients who entered the hospital from the first to the fourth day inclusive, the mean period of the disease was a fraction less than twelve days. Of twelve who entered from the fifth to the eighth day inclusive, the average duration was 14¾ days. One entered on the fourteenth, and one on the fifteenth day of disease, and the average period of these was twenty-five days. "No other circumstance," says Dr. Jackson, "exercised so great an influence on the period of convalescence as this; so that it would seem to be of less importance, whether our patients were bled or not, than whether they entered the hospital early or late."

It is not our intention to enter upon the other topics discussed in the book. We should not know where to begin; and certainly we should not know where to leave off, short of the last page. The entire work deserves faithful and attentive study. The various subjects of which it treats are so connected with each other, and so

mutually dependent, that the account which it has been our purpose to give of its leading and prominent topic is, necessarily, even so far only as this topic is concerned, partial and imperfect. Let every practitioner who prefers the definite and certain to the indefinite and uncertain,—clear and achromatic vision to the illusions of spectral and shadowy forms,—accurate observation to vague and declamatory conjecture, or fact to fancy, *buy it.*

We cannot let this occasion pass without putting on paper some of the reflections which have been for a long time floating about in our mind, and which have gathered around this book as a kind of nucleus, thus assuming something like form and arrangement. It seems to us a matter of sober and waking certainty, that with Louis's adoption of what is called the numerical system has commenced a new era in our science. The true light has at length shone. The safe and straight path has at last been entered upon. After a vast deal of talking about observation as the only sure guide in medical science, a few men have begun to observe. After ages of preaching the day of practice and example has begun to dawn.

The adherents of the old regime in medicine for a long time looked askance at the pretensions of French pathology. They said that Corvisart, and Laennec and Broussais were engaged in a most frivolous and unprofitable occupation in studying the minute alterations wrought in the organs and tissues by disease. They said, you do not cure your patients any better from this knowledge of morbid anatomy. It is a familiar fact, we presume, to most of our readers, that this has been a standing charge against the anatomico-pathologists, and a standing argument against the value and importance of their labours. There was some truth too in the allegation. It was said, however, in reply, and very justly, that *all* knowledge must be valuable; and none the less so, perhaps, because the precise nature and extent of its usefulness did not become immediately manifest. But we doubt whether even the pathologists themselves, or their advocates, have generally conceived truly the relation of their peculiar researches, and of their results to therapeutics. That their bearing on the treatment of disease is most important, we shall be the last to deny, but we doubt whether its nature is precisely such as it has commonly been supposed to be. In what way does an accurate knowledge of pathology and symptomology of a disease connect itself with the treatment? Does the former, of itself, lead to the latter? We apprehend that it does not. Therapeutical indications do not, in any case, flow from the nature of the disease, as it has been called. A knowledge of the symptoms of any given disease, together with its pathological changes, is necessary solely as a means of certain diagnosis. It leads to this indisputable point, but it leads no further. The treatment of the disease, after it has thus been identified, is to be governed exclusively by the decisions of experience. The diagnosis of phthisis, for instance, is now settled. Its natural history is written. Its specific characters are ascertained. In nearly all cases it is clearly and unequivocally recognisable. But how far is our knowledge of its

symptoms and its morbid anatomy to guide us in our practice? In the absence of all knowledge derived from observation, they might suggest some hints or probabilities derived from uncertain and loose analogies. They could do nothing further. Suppose it should be found by trial that phosphorus, or arsenic, or strychnine, or any other substance whatever, mitigated the severity of the disease, or prolonged the life of the patient, should we be justified in refusing assent to the practice because, according to our *à priori* reasoning, these substances are contra indicated? The symptoms and the pathological alterations of typhus fever,—thanks again to the numerical method of Louis,—are now pretty well made out. Does this knowledge settle the best mode of treatment? By no means. This is yet to be ascertained, not by *à priori* reasoning from the nature of the disease, but by rigorous observation. It may be found that some substance, which, according to our speculative notions, we should expect would aggravate the irritation of the elliptical plates, will shorten the disease, mitigate its severity, and lessen its mortality.

We say, then, that the natural history of a disease is to be studied, in order that we may recognise it, and be able to distinguish it from others, more or less resembling it. The best treatment must be learned from the trial of remedies. It cannot be deduced from the pathology of the disease. And yet practical medicine has suffered as much, perhaps, from wrong notions on this point as it has from the misnamed and misunderstood experience of physicians in regard to the utility and action of remedies. That practice has been esteemed the most philosophical and the most systematic which has based itself on pathological principles. But this procedure differs in no way from that which led some of the old hypothetical systematists to give acids in all cases, on the doctrine that all disease depended on a predominance of alkaline humours. Because our speculative notions in regard to the nature of morbid action may be less absurd than were those of former times, it does not therefore follow that there is less essential error in the system itself. If these views are correct, it is exceedingly important that they should become generally practical and operative. The widest aberrations from reason and common sense of which physicians have ever been guilty, have been made under the influence of this "false doctrine." The most disastrous consequences recorded in the whole history of our art have arisen from this cause.

We wish to say a few words in relation to the kind of experience just alluded to. And here, in the very book which we have been noticing, there is a beautiful illustration of the necessity and the efficiency of the numerical method. Dr. Jackson himself, one of the most careful, and accurate, and sagacious, and matter of fact observers, did not know the results of his own experience in the treatment of pneumonitis, till he adopted this system, and counted and analyzed his cases. "I had believed," he says, "that blood-letting after the third or fourth day in pneumonitis was not often useful; and that sometimes it was injurious; but that on the first, second, and third,

and perhaps on the fourth, it both mitigated the disease and shortened it." The latter opinion he found to be true, though it may be doubted whether to so great an extent as he had supposed; the former he had good reason to think erroneous, while his numerical analysis established the important fact, that temperature, together with the longer or shorter residence of the patient in the hospital, seemed to have more influence on the duration and severity of the disease than even the blood-letting itself. If this may be true in such cases as the one adduced, what shall be said of the great mass of experience quoted as authority by those who are our teachers through the press, and in the lecture room? In many cases this experience may approximate, more or less, to the truth; but in some it is altogether fallacious, and in all it lacks precision, positiveness, and accuracy. This remark needs neither proof nor illustration. The whole history of therapeutics is a confirmation of its truth. This false experience has done more than any thing else towards creating distrust and scepticism in regard to the value of our art. How proverbial, even among ourselves, is the deceptive character of medical experience; and how plain is the reason why it should be so.

The study of pathology and symptomatology by the numerical method,—that is, the full study and analysis of all their phenomena, and the relations of these to each other, or, to speak more accurately, the study which has only very recently commenced of the entire natural history of disease—has enabled us to distinguish and identify a considerable number of the more common and important species. We have thus arrived at the first indispensable pre-requisite to treatment, —that of a sure diagnosis. The next thing is to ascertain the value of remedial measures by precisely the same cautious and rigorous observation which has led to accurate and positive diagnosis. This has been begun, and some of its first results are contained in the joint work of Louis and Jackson which we have been reviewing. It is only begun. The questions which these men are investigating are very far from being definitively settled. This can be done only by repeated and continued observation, conducted in the right spirit, and by men qualified for the task.

We may hope that the doubt and uncertainty in which the value of remedies has so long been involved, will thus gradually disappear; and where a new practice is introduced, we shall have a standard by which to measure it—a quick and infallible test whereby it can be tried. The natural history of the disease to be treated being first known, all the circumstances which can effect it being ascertained and appreciated, we have only to demand how far, and exactly how far, the disease has been shortened in duration, diminished in severity, or rendered less dangerous to life by the new method, when compared with other methods of practice previously in use.

Let Louis and all those, both old and young, who have imbibed his spirit, go on in the good work. We have bid them, God speed! After centuries of an existence partaking somewhat of the mixed character of a sickly and rickety infancy, and an ignorant and half crazed

manhood, our science is at last, under their auspices, and by the aid of their great predecessors in pathology, beginning to assume the form and attitude, and steady tread, of intelligent and maturing life. We have full faith that she will ultimately take her true position by the side of her sister sciences, so long and so immeasurably in her advance. E. B.

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ART. XV. *The Philosophy of Living, or the way to enjoy Life and its comforts.* ('A man's own observation, what he finds good of, and what he finds hurt of, is the best physic to preserve health.'—*Bacon.*) By CALEB TICKNOR, A. M., M. D. New York, 1836. 12mo, pp. 334. (Being No. 77 of Harper's 'Family Library.')

Were we to judge from the titles of various publications which have been ushered into existence within the last few years, we might conclude that this is the very era of 'Philosophy.' We have the 'Philosophy of the Moral Feelings,' the 'Philosophy of Zoology,' the 'Philosophy of Natural History,' the 'Philosophy of Sleep,' the 'Philosophy of Travelling,' the 'Philosophy of Health,' the 'Philosophy of Manufactures,' and, doubtless, others, besides the 'philosophy' before us; nor, if such were our conclusion, should we be altogether in error. A more philosophic spirit, perhaps, pervades the world; but still an attentive examination of these productions would induce us to infer, that there is no marked reason, except fashion, why the caption should be appropriated to many of them; certainly, with at least as much propriety, might the title of Ticknor's work have been prefixed to the 'Lectures on the means of promoting and preserving Health,' by Dr. Hodgkin, or to the 'Principles of Physiology, applied to the Preservation of Health,' of Dr. Andrew Combe; to the latter of which works Dr. Ticknor makes frequent allusions in terms which it richly merits.

If the fact of the appearance of the 'Philosophy of Living,' as one of the constituents of 'Harper's Family Library,' were insufficient to show that the work is wholly popular in its cast and objects, the admission in the advertisement and preface would establish it. Such works are generally excluded from the Review department of this journal, but it may admit of very serious question, whether this ought to be the case, and whether it is not the bounden duty of the *custodes* of science and literature to notice every production from a respectable professional source, in order that the medical portion of the community may be made aware of its character, so that they may influence the *laity* to peruse or reject it, according to its deserts. Yet, more is this necessary, when improper inculcations are to be found, which cannot fail to mislead the reader.

In the case of the volume before us, this may be considered a work

of supererogation by the publishers, inasmuch as—according to their advertisement—it has already passed through the ordeal of critical examination. "In justice"—say they—"to Dr. Ticknor and ourselves, we feel bound to state, that his manuscript was submitted to the criticism of a number of literary and scientific gentlemen, to whom he was unknown even by name; and that they, as well as his friends, spoke of it in the highest terms of praise, without any communication with or knowledge of each other. They unanimously declared for its publication, and deemed it worthy of a place in the 'Family Library.' "

We do not mean to gainsay these encomiums. The production is on the whole creditable; one of its objects, as expressed by the author, that of opposing 'unwarrantable extravagance,' is praiseworthy; we can only regret, that, on some points, he appears to us to sanction 'extravagances,' as signal as any of those which he combats; at times, too, a flippancy bordering on frivolity is indulged, which, in a work of this kind—inculcating, as it does, principles of morality as well as of hygiene—ought to have been avoided. Occasionally, too, there is a looseness of connexion between the topics discussed, which interferes materially with their force and indeed their intelligibility. Of this we have an example in the concluding part of his preface, in which he gives a quotation from Bacon, which does not appear to us to have any immediate bearing on the matter preceding.

"The author has endeavoured to give to the following pages a title to express their contents, and has treated the subject, as far as he was able, in such a manner as it seemed most to deserve, without unnecessarily exciting prejudice or ill will. It is but justice to say, that this little work was planned and mostly written in the early part of '34, previous to the republication in this country of Dr. Combe's valuable work, 'The Principles of Physiology,' and that its original design was similar to his. I have deemed it expedient, therefore, to alter somewhat my original plan: circumstances have delayed the publication, and the work has been made to assume its present shape. The nature of the work, embracing as it does, a multiplicity of subjects, would not allow of so protracted a discussion of their merits as in many cases would be interesting or instructive: so that it possesses at least one merit—brevity: an excellence that is not too often found at the present day.

"The first creature of God, in the works of the days, was the light of sense; the last was the light of reason; and his Sabbath work, ever since, is the illumination of his spirit. First he breathed light upon the face of the matter, or chaos; then he breathed light into the face of man; and still he breatheth and inspireth light into the face of his chosen. The poet* that beautified the sect that was otherwise inferior to the rest, saith yet excellently well, 'It is a pleasure to stand upon the shore and to see ships tossed upon the sea; a pleasure to stand in the windows of a castle, and to see a battle and the adventures thereof below: but no pleasure is comparable to the standing upon the vantage ground of truth, (a hill not to be commanded, and where the air is always clear and serene,) and to see the errors, and wanderings, and mists, and tempests in the vale below:' so always that this prospect be with pity, and not with swelling or pride. Certainly, it is heaven upon earth to have a man's mind move in charity, rest in Providence, and turn upon the poles of truth."—(Bacon.) p. vi.

Now, all this is well as a homily on truth; but what connexion has it with brevity, the subject-matter of the sentence immediately pre-

*Lucretius.

ceding? The author, again, has done us the honour to quote a description of the diet of the ancient Romans, from an article in the American Quarterly Review, which has not much more bearing on the subject before it, than the one we have cited; and other instances might be enumerated. It may be said that these are trifling blemishes; but the value of the work would have been enhanced by their absence.

On the subject of diet, generally, the remarks of Dr. Ticknor are judicious. He properly maintains, that nature has formed us in such a manner, that a few grains or even ounces of food or drink more than she requires will not materially embarrass her operations. Still, indulgence—over indulgence—in solid food, is a fruitful source of disease. They who do not regard the mucous membrane of the stomach as a part of the surface of relation, or of that which receives impressions, like the rest of the dermoid surface, and transmits them to the brain, still look upon the stomach as the 'centre of sympathies.' Can we, then, be surprised, if surfeit after surfeit should so disorder the functions of that viscus, that sympathetic irradiations proceed to every part of the economy, and ultimately induce disease in some internal organ, which may, at the time, be particularly predisposed to assume a morbid condition? How easy is it for us to comprehend, that irregularities in this respect may be the cause of most of those affections that are termed 'bilious.' In common parlance, every kind of gastric embarrassment, whether induced by undue quantity or improper quality of diet, receives this epithet. Fortunately, in the generality of cases, the uneasy feelings pass off with the digestion of the aliment that occasioned them; but if the cause be over and over again applied, irritation and its consequence, inflammation, may be induced in the lining membrane of the stomach and duodenum: this irritation is propagated along the biliary ducts to the liver: excitement supervenes in that organ, and thus the biliary system becomes really diseased. This is a case in which the mischief is induced by the stimulus of quantity, and the way to prevent it is obvious. The individual, presumed to be in health, should quit his repast as soon as he feels the first intimations of satiety. This is an indispensable prophylactic rule, and inattention to it is the cause of many of those cases of dyspepsia that occur in persons of otherwise regular habits.

The oft agitated question, whether man should subsist on vegetable or on animal food exclusively, or, in other words, which of these is the most natural to him, does not merit the space assigned to it by the author. Our business relates to man as he is. Every where he is—to a certain extent—omnivorous; unless, indeed, it be in frigid regions, where no vegetable food can be met with. Mackenzie assigns the following order to the aliments, as they succeeded each other in the first ages:—Fruits, grain, herbs, bread, milk, fish, flesh, wine, and beer; but this is ideal. Man, doubtless, lived, in the first instance, on vegetable food exclusively; but, as soon as a child was born, its diet—derived from the maternal bosom—was necessarily animal. The great difference between animal and vegetable sub-

stances is the presence of azote in the former. There are animal matters, indeed, which contain no azote, but the rule is general. Milk is highly azoted, whatever may be the character of the food of the female furnishing it; the requisite azote being readily obtained from the inspired air. Milk, therefore, since the time of the first born of our first parent, has been, and is, for months generally, the sole diet of the young infant, which is, therefore, carnivorous. There can be no doubt, however, that man may be accustomed from infancy to an exclusively vegetable or an exclusively animal diet; either of which may, perhaps, be adapted for the full developement of his mental and corporeal powers; but we think there can be as little doubt, that the structure of his digestive apparatus pronounces him to be, by nature, omnivorous; whilst adequate experience demonstrates that if, after having been accustomed to feed on both animal and vegetable aliment, he be restricted to one or the other, he will fall off, and may become scorbutic. It is the want of a mixed diet that occasions scurvy in long voyages; and, accordingly, if vegetable substances, as lime-juice, be attainable, the disease is never engendered. But this kind of cachexia, or, as the Germans still call it, dyscrasy, may, as we know from experience, be produced with equal certainty by restriction to vegetable diet. An unnecessary difficulty has been raised by some writers, regarding the nutritive properties of substances that do not contain azote. Magendie succeeded in satisfying himself that dogs, removed from their regular open range of air, exercise and diet,—shut up, that is, in a confined space, and fed on sugar and substances which do not contain azote, sickened and died; and, in his view, owing to the privation of azote. We have just remarked, however, that omnivorous man, when confined to one kind of diet, animal or vegetable, is equally deteriorated. The evil is not in the privation of azote, but in the seclusion and exclusion, and especially in restricting organs of nutrition, which had been accustomed to variety, to one kind of action only. Variety of aliments is essential to plenary health, where such change or admixture has been indulged for any length of time.

As to the comparative facility of assimilation of animal and vegetable substances, there can be no doubt that the former are entitled to the preference. The flesh of an animal is more readily converted into that of man than any form of vegetable matter. The complex organization of the digestive apparatus of the herbivorous and granivorous, compared with that of the carnivorous, animal, would corroborate this deduction, were corroboration necessary. Dr. Ticknor affirms, that the flesh of animals, which live on vegetables, is far more nutritive than that of carnivorous animals; and, he adds, "the latter is indigestible and unfit for the purpose of nutrition." As respects the latter part of the assertion we agree in the main with him, but we think he is in error as to the first; or rather, that he has not sufficient proof of his position. The carnivorous animals, high up in the scale, are not eaten by man, and, consequently, we have no means of testing the matter on them.

The observations of Dr. Ticknor, in his third section—on '*Food, solid or fluid*'—exhibit some of that laxity of composition of which we have spoken.

"Much discrepance of opinion has existed among members of the medical profession, as to the digestibility of solid and fluid aliment; but the question may be considered as now settled by the experiments of Dr. Beaumont. He found, by actual inspection of the interior of the stomach, during the process of digestion, that all fluid was first converted into solid food—the watery portion passing into the upper portion of the intestines, or being absorbed before the digestive process commenced. He proved by his experiments, also, that the gastric juice is the proper solvent of the food; and that by its agency, combined with the warmth of the stomach, digestion is performed. Therefore, introducing fluid aliment into the stomach *dilutes* and *weakens* the gastric juice, and renders it unfit and unable to perform its proper office. Thus we may understand why some can take none but solid food, with very little or no drink at the same time. The gastric juice is not only weakened, but in many debilitated constitutions, it is not readily formed, so that there is but a small and inadequate supply of it; hence the great impropriety of enjoining a *slop-diet* on all who are suffering from impaired digestion." p. 63.

Although familiar with the experiments of Dr. Beaumont, in the institution of some of which we participated, this is the first time we have heard of his having settled the question referred to. Long before his experiments, it was maintained in the works on physiology, that, in the case of all animal and vegetable infusions, the watery portions are absorbed by the vessels of the stomach and small intestines, and that the solid matter undergoes digestion; but this was not settled by any experiments of Dr. Beaumont, nor could it be by actual inspection of the interior of the stomach, in the case that formed the subject of his experiments, inasmuch as the aperture did not admit of the pyloric portion of the stomach being seen. There is no doubt whatever, that too much fluid does dilute and weaken the gastric secretions, and that there is a certain '*digestive texture*,' which is the most favourable for digestion; but, after all, as the author has correctly concluded, although it is not so easy to see how he has arrived at the conclusion from his premises—

"Every individual must be his own judge in the case, and his own feelings are to be the test. When he feels the least incommoded, when he feels the least sense of weight in the region of the stomach; in one word, when he feels the most comfortable after eating a meal of solid or liquid food, he may conclude with certainty that, whichever it may be, it is the most proper for him."

Dr. Ticknor seems to be a great advocate for individual decision as to appropriate diet. The lower animals, he says, have no other guide than their taste or instinct to direct them in the choice of their food, and yet they seldom make a fatal mistake. "Man, by being placed at the head of the animal creation, is *not deprived of this faculty;* he has it in common with the others—and shall it be said that he shall not listen to the voice of nature within him?" p. 66.

Yet this voice of nature, without knowledge derived from experience, would be but a fallacious guide. The flavour of the deadliest of all poisons, the hydrocyanic acid, is agreeable to the palate; and all made dishes,—prepared, that is, with a large quantity of nutritive matter in a small compass, and, therefore, difficult of digestion, are form-

ed expressly to suit the taste, not for facility of conversion in the stomach. In this it is, that the cookery of France so far excels that of other countries, in despite of the assertion of our author, which is negatived by the experience of every traveller, that the continental cookery is so bad as to cause the English travellers to be *temperate* in *eating*. (p. 29.) In a subsequent section, he states, that the law of nature is the only rule applicable to the regulation of the quantity of food,—that is, we presume, as regards simple food,—and is disposed to leave every one to the dictates of his stomach and taste, in a reasonable choice of his diet, as to quality, and to the laws and wants of his system in relation to quantity; yet, he agrees, that "dyspepsy is oftener the effect of over-eating and over-drinking than of any other cause," an admission which detracts somewhat from the force of his previous observations.

The following needless comments on a vulgar error afford an instance, in which we think the author has 'fallen from his high estate," in order to attempt the ludicrous, which is clearly not his forte.

"But it is said that man partakes of the nature of the animals which he eats. What say you to this, ye beef eaters of Old England, or ye pork eaters of New England? are ye any more disposed to be beastly or swinish? and ye my fair countrywomen, who are unsurpassed throughout the universe for intellectual worth and refinement of feeling, do you acknowledge yourselves excelled by those who live on *potatoes* or *sour krout?* Or ye who live on fish, are you any the more *scaly* than he who lives on bran bread? Are you more fond of cold water than he? &c." p. 42.

As to the time of eating, Dr. Ticknor properly considers the observance of regularity to be more important than of particular hours. Three or four centuries ago, our English ancestors, of the better class, regulated their meals in a manner singularly contrasting with the customs of their descendants. In the fifteenth century, they had four meals a day—breakfast, dinner, supper and liveries—the last being a kind of collation in the bed chamber, immediately before retiring to rest, analogous to the supper of the moderns, where such a meal is eaten. In the Southern States of this Union, the true supper is so rarely taken, that the evening repast of tea usually bears that name. Our ancestors breakfasted, in those days, at seven, dined at ten in the forenoon, supped at four, had their liveries between eight and nine, and soon after went to bed. This was the custom with the great; but, what is remarkable, the trades-people and mechanics observed later hours than the higher classes. They breakfasted at eight in the morning, dined at noon, and supped at six in the evening.

What a difference between the manners of past and present periods! At the present day, in Great Britain, the *dejeuner* is often *celebrated* at two in the afternoon; and, as we have unfortunately witnessed and felt, the company, at a fashionable dinner party, have not sate down to dinner until nine in the evening! But 'custom,' saith the great dramatist, 'hath made it a property of easiness.'

In the author's remarks on milk, as an article of dietetics, which are on the whole good, we find it stated, that in infants, and indeed in the young of all mammiferous animals, there is, in health, a very active condition of the digestive organs; the contents of the bowels

are frequently expelled, and always in a semifluid state. This active state of the alimentary canal, Dr. Ticknor says, "is not owing to the quality of food, whose tendency is to produce a contrary effect; (?) but rather to an abundant secretion of bile, and, perhaps, to other causes, which do not exist in adult life."

We have no doubt of the agency of these other causes. Certainly, we have no evidence of the greater secretion of bile; the greenness of the evacuations is none; because we know that, if acid be added to healthy bile, out of the body, it occasions such greenness. The appearance is owing to that predominance of acid in the primæ viæ, which prevails in infancy. Moreover, there is the same activity in the urinary organs, and Dr. Ticknor would scarcely invoke the agency of the bile to explain that.

On the subject of drinks, the author has evidently had a task of some difficulty. Convinced, he says, that alcoholic potations are never necessary for a person in health,—ardently attached to the temperance cause, yet desirous of eschewing ultraism,—his conclusions are not very perspicuously stated. Natural thirst, he observes, and who is there that will not agree with him? is never, in health or disease, quenched by ardent spirit. The brains of hard drinkers, he says, are found, after death, 'harder *and of more firm consistency.*' *Ergo*, he concludes, it is fair to infer, that *moderate drinkers* are affected in proportion as they are exposed to the same cause. *Quod est demonstrandum!* Dr. Ticknor's repugnance extends to the use of wine, though not to the same extent; but the family of malt liquors, and indeed of brewers, meets with signal condemnation. We will allow him to record his abhorrence in his own language.

"Alcohol richly merits a place on the shelf of the apothecary, by the side of our most potent remedies; for any thing capable of doing so much mischief, can, if rightly used, do some good. I speak now of ardent spirit, alcohol, under the varied forms of distilled liquors and wines, free from the admixture or adulteration of any noxious or unwholesome drug. With the compounds denominated porter, ale, and beer, the evils are magnified; they not only contain the noxious ingredients of their ordinary composition, but the vile drugs with which they are adulterated. There are, doubtless, some honest brewers; but, to a certainty, there are a few consummate rogues. It is known, beyond a possibility of doubt, that the most poisonous drugs with which we are acquainted are used, more or less, in the adulteration of malt liquors: but the extent to which this murderous system is carried, is best known to those whose reckless love of money prompts them to the practice of this diabolical knavery. But a pure malt liquor, the old-fashioned ale, made of malt, hops, and water, is claimed to be a wholesome and nutritious drink: and "tis passing strange' that this claim has been almost universally acknowledged—and that too even by medical men. A most important item in making up the account of the wholesomeness of this beverage, has been unaccountably overlooked; it has been thought that if nothing worse than hops entered into its composition, it could not, therefore, be hurtful to the healthy constitution. But how justifiable is this conclusion from the premises, a moment's examination will enable us to decide. Dr. Chapman, in his Therapeutics, says, 'that it,' the hop, 'is possessed of such medicinal qualities as to entitle it to a place in the Materia Medica. It is, perhaps, as a *narcotic* that it has the highest claims. The fact of its having this property was long known, so generally so, indeed, that a pillow of it came to be a popular expedient to quiet nervous irritation and procure sleep. As an anodyne it may be substituted for opium, where the latter, from idiosyncrasy or other causes, does not suit the case.'

" 'They are also said to possess the power of procuring sleep in the delirium of fever, and in mania, when used as a pillow; and owing to this effect having been confirmed in the case of the late king, George III., their efficacy as a general narcotic, when introduced into the stomach, has been investigated. Dr. Maton observed, that besides allaying pain and producing sleep, the preparation of hops reduces the frequency of the pulse, and increases its firmness in a very direct manner. One drachm of the tincture and four grains of the extract, given once in six hours, reduced the pulsations, in twenty-four hours, from ninety-six to sixty.'* The dose of the powdered hop is from three to twenty grains; and the other preparations are given in a dose of proportionate strength. The testimony of many other writers, and the experience of multitudes of practitioners confirm the above statements.† The usual quantity of hops, according to the formula of brewers, is about one ounce avoirdupois in a gallon of ale; so that he who drinks his quart of beer a day, swallows each day the active properties of a quarter of an ounce of hops. The Eclectic Dispensatory recommends that the infusion of hops, to be administered with a view to obtain its sedative, narcotic effect, be made in the proportion of a half an ounce of hops to one pint of boiling water; and of this, *one ounce and a half* to be taken *two or three times a day.* Thus, then, a single glass of *pure ale* contains twice the quantity of hops that is prescribed as a sufficient dose when used as a medicine!!! Little wonder there need be at the bloated carcasses of beer-drinkers; but we may well be astonished at the infatuation of man, in daily pouring down such quantities of this most 'villanous compound.' Can any man, dare any man, put the question to his conscience, whether or not, with these facts staring him in the face, he can any longer indulge in the habit of beer-drinking? But if his conscience impose no obstacle, reason, speaking by facts like these, must lead him to consider well before he tastes. Some of the articles that are, or have been, used in the manufacture of beer, besides hops, are *Indian cockle, nux vomica, bitter bean, grains of paradise, Indian bark, coriander seed, Leghorn juice, red pepper, orange powder, colouring, hartshorn shavings, Spanish juice, ginger,* 'cum multis aliis.' If the imagination of man ever conceived a more horrid mixture, Shakspeare put it in his witches' caldron; and it is not improbable that the brewers' tubs suggested the idea of his 'hell-broth.' Let him describe his own infernal mixture, and if anything on earth can equal it, malt liquor is the thing.

'Root of hemlock, digged i' the dark,
Liver of blasphemous Jew,
Gall of goat, and slips of yew
Slivered in the moon's eclipse,
Nose of Turk, and Tartar's lips,
Finger of birth-strangled babe—
Make the gruel thick and slab;
For a charm of powerful trouble,
Like a hell-broth, boil and bubble,
Double, double, toil and trouble,
Fire burn, and caldron bubble.'
'Cool it with a baboon's blood,
Then the charm is fine and good.' p. 92.

What would the eccentric Kitchener have said to this abuse of the 'vinum Britannicum,' the 'liquid bread,' which he thought preferable to any other beverage during dinner or supper? and how unfortunately must that people be situated, who are essentially 'beer drinking'! The whole paragraph is a specimen of that 'ultraism,' against which the author professes to 'run a muck,' and the same may be said of his

*Eclectic Dispensatory.

†Dr. Ives, of this city, has done more than any other man to make known to the profession the valuable medicinal properties of the hop.

remarks—medical and moral—on the use of tobacco. Weighty objections can, doubtless, be urged against its abuse. We know it to be a virulent poison when taken in sufficient dose; but we do not give so much weight to the elucidation offered by the author as he himself does. "If tobacco," he observes, 'is so poisonous as to destroy animal life instantaneously, when applied to the tongue," (Qu. In what form?) "it needs no other argument to prove its hurtful tendency to health, when habitually and daily used." This appears to us to be a 'non sequitur.' Have we not constant opportunities for witnessing the facility with which the system accommodates itself to influences originally malign? and are we justified in concluding without any sensible evidences, that an article, which, in large doses, is deleterious, must necessarily be prejudicial in a smaller dose? If this were true, we should run the risk of permanent injury from flavouring our custards, day after day, with the peach leaf, inasmuch as we know that the hydrocyanic acid, which communicates to it its flavour, in an adequate dose, is a rapidly fatal poison. As to the author's comments on the vulgarities associated with chewing, smoking, &c., we approve of their correctness, rather than of their taste. A cigar smoker he compares to a "walking volcano," and he thinks the definition of an angler, by "a British classic writer," might be transferred to the other worthy:—"a stick and a string, with a worm at one end, and a fool at the other"!

Dr. Ticknor's fifth chapter is on dress. We have nothing to object to the general rules he lays down on this subject. He commences his observations with the physiology of respiration, the pertinence of which we do not exactly see. Nor are we prepared to accord with him, or with Bichat, who is the author of the view,—that the blood, as it returns in the veins to the heart, is altogether unfit for nutrition; and "acts as a most deadly poison, if allowed to enter the arteries without undergoing the change." This, we say, was the view of Bichat; but the experiments of Williams and Kay have shown, that it is by no means as deleterious as was believed, and that in asphyxia the organs die in consequence of the deficiency of arterial blood, rather than from the presence of black blood. The phenomena, too, of Asiatic cholera are opposed to the notions of Bichat.

The animadversions of the author on the subject of tight-lacing—that baneful practice, which has laid the foundation for so many fatal maladies in the fairest part of creation—are just and proper, and we hope will not be without their influence in correcting the evil. How many thanks would be due from the philanthropist, would some of those, who hold the necessary elevation in the fashionable world, set an example on this head, and introduce the custom of wearing an article of dress which could exert no injurious compression. Fashion alone regulates the matter; and were the present mode to change, its successor would soon exert the same imperious sway, whilst the evils that are now so much deplored might be abolished.

Another physiological opinion espoused by the author admits of equal dispute,—that the perspiration is composed of useless and nox-

ious materials, which, for the well-being of the system, must be separated from the blood, and discharged from some of the outlets of the body; and that checked or suppressed perspiration is a prolific source of disease; "as must be clearly manifest when we consider that the daily quantity of *effete and poisonous fluid* is retained in the circulation, and distributed to every part of the body, to all the delicate vital organs." But it may be asked, in the first place, can the two pounds —and why the quantity is estimated at two pounds, we know not—be retained in the system. It appears to us certainly not. There is another function of depuration, to which the author has alluded—that of the kidneys; and between the two there appears to be a kind of compensation. In summer, when the cutaneous transpiration is copious, the urinary depuration is less; whilst in winter, the reverse holds good. Without, however, going at length into this matter, we may adduce, what appears to us to afford a conclusive argument against Dr. Ticknor's views,—that more danger results from exposing a *part* of the body to the application of cold and moisture, than the *whole*. This is proverbial every where, and the Spaniards have a saying, which embodies the universal belief into a popular form—

"If cold wind reach you through a hole,
Go make your will, and mind your soul."

Again, it is a matter of common observation, that we can pass from a heated room, when all our organic actions are in a state of excitement, into the cold air in winter with impunity; and a similar truth is exhibited by the operation of the Russian vapour bath, in which the bather, after having been steamed at a temperature of 130 degrees and upwards, throws himself into cold water—sometimes into snow—without mischief. Yet, if obstructed transpiration were as common a source of disease as the author before us believes—and as many hundreds believe with him—disease ought rather to result from these general checks, than from the partial checks to which reference has been made. There are few individuals who could expose themselves to a draught of air through a key hole impinging on the naked head, without suffering; but is it philosophical to refer the suffering to the retention of the matter of perspiration over so small a space of the cutaneous surface—and ought it not rather to be ascribed to the irregularity of capillary action induced in the part; such irregularity extending to the rest of the capillary system of vessels, between all parts of which we know that an extensive sympathy exists?

The chapter on amusements, including the theatre and dancing, we pass by without comment, as being more moral than medical. The former is another of the topics on which the author's views must be esteemed somewhat ultra. Dancing we hold to be a valuable gymnastic exercise, especially in cities, where the due amount of exercise is rarely taken. Both these amusements, however, require that due care should be taken in other respects, or the health may suffer; but to the simple exercise of dancing, when appropriately used, we can see no objection.

If our views on the influence of mental exertion on the body do

not agree in other points with those of the author, they do as concerns the error of the "generally prevalent notion," (we doubt whether it is generally prevalent,) "that a superior intellect, or great genius, is incompatible with a robust and vigorous body." Yet this opinion is maintained by one whom Dr. Ticknor esteems "a medical writer second to no one of this or any age."—"De gustibus, &c.," as the author himself has said on another disputed topic. The position, he affirms, and we accord with him, "is founded in error and sustained by ignorance," and "it originated, probably, from the fact, that there are and have been many great men, of remarkably feeble constitution, and delicate health; but if their health had been good, there is no reason to believe that their powers of mind would not have been still greater." p. 214.

Some good remarks are made as to the change of climate requisite for the valetudinarian during the winter months—and especially for such as are of the tubercular diathesis. Dr. Ticknor accords with us, that no part of the United States is better adapted to become the residence of invalids requiring a warm climate than Florida; but he is extravagant when he asserts, that it is as much superior to the south of Europe as the latter is to Nova Zembla or Lapland. "Many," he says, "who have emigrated to the interior of Florida, in the most hopeless condition, apparently in the last stage of pulmonary consumption, have completely recovered, and for many years enjoyed uninterrupted health." p. 257. He thinks Texas, in point of salubrity and adaptation of climate, equal to, if it do not surpass, any other country of the globe, as a residence for consumptive invalids. His picture, however, of the absence of malaria is greatly overcharged. The summer and autumnal fevers are malignant on the gulf of Mexico; but these occur, it is true, at seasons during which the atmosphere of the United States is sufficiently mild for the consumptive. Dr. Ticknor must have been misled by partial testimony, when he ascribes to the country "an equable atmosphere, sufficiently warm and moist in the winter months, and *not loaded with moisture and poisonous effluvia* in the summer." Nothing in the south of Europe," he adds, "will compare with this." p. 258.

The last chapters of the book are on air and locality, temperament, age, sex, and marriage. Why is it, by the way, that the author estimates the proportion of azote to oxygen in the air of the atmosphere, as 76 to 23? The prevalent computation amongst chemists is four to one: some, however, adhere to the old proportions of 79 to 21: but none that we recollect have given the same ratio as Dr. Ticknor. Again, how is it that the author makes the melancholic and the bilious temperaments synonymous,—in the teeth of universal authority, which holds the choleric and the bilious, the melancholic and the atrabilious to be of like signification.

Such are some of the topics discussed in the "Philosophy of Living." As the work is destined for the public rather than for the profession, we have touched mainly on those points that are of a profes-

sional character, and especially on such as do not square with our own ideas. To understand the manner in which the author has treated his various topics in connexion and detail, it will be necessary to refer to the work itself, which, as we have said before, is creditable, and calculated to be of advantage; although by no means to the same extent, as if he had eschewed ultraism on all points, as well as on the few which he has made the subjects of his animadversions. R. D.

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ART. XVI. *Mémoires de l'Academie Royale de Médecine.* Tom. 4. Paris, 1835.

The great importance of this collection of papers, written by the members of one of the most learned bodies in Europe, seems to demand more deliberate notice from the reviewer than is usually bestowed upon periodical publications. But the nature of the investigations recorded by the Academy, which cover the entire field of medical science, renders it extremely difficult to execute the task. Several individual articles in the volumes before us would be worthy of a distinct review—and we propose to confine ourselves, in the present article, to the surgical papers only—leaving the historical, medical, chemical, and anatomical essays for a future occasion.

The first memoir on the list is that of Dr. G. Mirault, upon the ligature of the tongue, and of that of the lingual artery in particular. It contains the details of a case of cancer, seated deeply in the centre of the tongue, and sufficiently advanced to present extensive carcinomatous ulceration, and a fungus which filled the mouth when closed, and was pressed down and flattened by the palatine arch. An attempt was made to cut off the principal supply of blood to the tongue, and, consequently, to the tumour, by tying both the lingual arteries near the hyoid bone.

The first operation was performed on the 17th of May, 1833. The design of the operation was to secure the lingual artery on the left side. It failed, as the artery could not be found, after the observance of all the rules laid down for the discovery of the vessel, and the employment of the lights of personal experience.

The surgeon then resolved to tie the left side of the tongue by means of a ligature including the whole of its substance, and to secure the right lingual artery by means of another ligature simply including the vessel.

"In consequence, on the next day, (the 18th,) I operated in the following manner. The patient, being seated upon a chair, the head being turned over and applied to the chest by an assistant, the chin being turned to the left, I assured myself of the position of the hyoid bone, and I made an incision upon the right side, which, tending from the great horn of this bone, was directed forward and upward, and was terminated at the anterior margin of the sterno-cleido-mastoideus muscle, passing at the distance of about six lines from the angle of the lower jaw. The skin, the cellulo-adipose membrane, and the platisma-myodeus muscle, were successively divided. The external jugular vein, which appeared at the

external angle of the wound, was twice tied and cut between the ligatures. I next incised the external lamen of the cervical fascia which covers the sub-maxillary gland. This gland itself was detached from its cellular adhesion to the aponeurosis, and was turned up upon the body of the lower jaw, where it was retained inverted by an assistant. Having arrived at the deep seated lamen of the fascia, I divided it in such a manner as not to injure the parts lying beneath, and brought into view the digastric and stilo-hyoid muscles, the lingual, pharyngeal, and external maxillary veins; each of which" (*vessels*) "was included in two ligatures, and divided between them. The hypoglossal nerve occupied the inferior part of the wound; I searched for the lingual artery, and found it a few lines above the nerve, upon a plane somewhat more deeply seated. One simple ligature was passed under the vessel by the aid of a curved needle with a handle, and I tied it, after having ascertained that the pulsation on the track of the ranine ceased, when the artery was compressed between the extremities of a forceps." p. 39.

The two wounds were stuffed with lint, *as usual*, and suppuration was established, and became so abundant as to exhaust the patient. While using a nutritious diet the fungus gradually became less considerable, the patient dragged out portions with her finger, and it finally disappeared, leaving an anfractuous ulcer eight lines in depth, with hard scirrhous edges. Toward the sixth of June, there occurred several hæmorrhages from the tongue, which were checked by agaric and pressure. On that day the surgeon proceeded to the performance of a third operation, which is described as follows:—

"I made an incision on the median line of the neck, from a point a finger's breadth below the chin to the hyoid bone. I divided the skin, the adipose tissue, the raphé of the mylo-hyoid muscles, and penetrated into the cellular interval between the genio-hyoid muscles. The tongue was next seized by its two faces with a forceps, of which the grasping extremities were guarded by agaric, and it was drawn out from the mouth. This forceps having been entrusted to an assistant, I plunged a large curved needle, armed with a ligature, through the wound. I made it traverse the base of the tongue in such a manner, as to penetrate into the mouth, and I drew it out with my index finger, which I had introduced to the bottom of this cavity to meet it. I caused the assistant again to seize the tongue, carrying it towards the right commissure of the lips, so as to separate it from the right side of the jaw. Then marking the point by which the needle ought to penetrate, with my index finger, in the maxillo-lingual groove, immediately before the anterior lateral half arch of the soft palate, I buried it in the inferior parietes of the mouth, directing its point, at first, from above downward, and then downward and inward, to approximate it to the mesial plane of the body, and I caused it to make its exit by the wound of the neck near the spot by which it had been plunged in the early part of the operation. The two ends placed beneath the chin were tied in a slip-knot and drawn sufficiently tight." p. 42.

The pain of this operation, at first very severe, began to decline in half an hour. In the course of the day the ligature required tightening, in consequence of three hæmorrhages from the ulcer. The immediate effects were slight swelling and deepened colour of the tongue, some puffiness of the face and fever, pains of the left side of the head, and some slight paroxysms of delirium on the fifth day. The section by ligature was completed in nine days, the knot having been tightened twice during that time. *Adhesion by the first intention*—"Adhesion immediate"—was prevented during the section, by the occasional introduction of a finger into the fissure.

After this operation, the scirrhous tumour became diminished in size, the edges of the ulcer soft, and the peculiar fetor disappeared.

Dr. Mirault next proposed the excision of the diseased portion of the tongue, now deprived of its larger vascular connexions; but dreading the difficulty of making a transverse incision near the base of the tongue, he resolved to perform a double operation for the purpose—first; by ligature, to divide the remaining half of the organ on the level of the previous ligature; and secondly; by the knife, to detach the front of the tongue from the floor of the mouth.

In pursuance of this intention, on the 16th of June, the surgeon performed his fourth operation, which was easily executed, as the track of the old ligature through the centre of the tongue was detected by a canula, and no new puncture in this direction was necessary. The section was completed with much less loss of time, and with much less pain, than were the result of the first ligature, and the only consequent accident was an erysipelas of the face, which terminated by resolution.

This time, however, the introduction of the finger, to prevent immediate union of the incision, was neglected by the patient, and, to the mortification of the surgeon, when the ligature fell, the right half of the tongue was found completely reunited! This accident was productive of the most happy result, for the fifth operation, for the removal of the diseased portion was rendered unnecessary by the healing of the ulcer and the disappearance of the tumour! The patient recovered entirely.

The various points of high interest in this singular case are so obvious that they scarcely require to be pointed out. It is the first instance of the application of a ligature to the lingual artery on the living subject. The mode of applying ligatures to the tongue through a median incision on the throat is of great value, as it enables us to enclose, without danger, the whole of that organ. The rapidity of the action of the ligature; the pain, so much less considerable than might have been anticipated; the facility of reunion, (though we are at a loss to comprehend how the "réunion immédiate" can follow a solution of continuity formed by an ulcerative process,) and the definitive action of the suppression of a part only of the vascular supply of a cancer, are all matters of high interest. When we add that there is appended a tabular view of the aberrations of the origin of the lingual artery in a number of subjects, and that the author makes many important observations on the surgical anatomy of the neck, and the relations of this artery, it will be perceived that the paper is one of unusual value.

Passing over a laboured monograph of the anatomy of the larynx and trachea, by E. A. Lauth, of Strasbourgh, illustrated by a plate, we meet with the paper of M. Salmade, on rachitis and the treatment of deformities. This surgeon considers rachitis and scrofula as closely connected, if not identical. The disease is rare among us, and it becomes us to be modest in speaking of it, but it appears very evident that there is much confusion in the paper. We cannot conceive that the same disease should sometimes enlarge and sometimes diminish the bones or their cavities; that it should always produce curvatures of

those organs, yet that it should sometimes render them brittle and at others soft and flexible. We do not see how it can give rise to an elongation of one side of the body of a vertebra, while it produces intersticial absorption of the other side, and we must positively protest against the assumption that the double lateral curvatures of the spine are always, or even generally, connected with either rachitis or scrofula.

The strictures of the author upon the treatment and results of cases at othomorphic institutions may be perfectly correct in regard to some such establishments, for there are few wider fields for empiricism than the management of deformities; but the directions with regard to exercise and position, given by the author himself, though too general to be applicable to individual cases, are such precisely as we supposed to be carried out at a well-governed hospital of this character.

The next article contains a case of imperforation of the anus and penis, with symptoms after operation of a narrow connexion between the rectum and urethra, by M. J. N. Roux, of Brignoles. The orifice of the urethra was found covered by a thin membrane, and tended to terminate behind the gland. The membrane was punctured, and the passage was established.

No signs of a return could be discovered, for there was no apparent raphé in the perineum, and the skin over the site of the anus was smooth and uniform. The sphincter muscles were present, and served as a guide to the operator. He commenced his incision with the scalpel; laid bare the external sphincters, and finding them coalescent at the median line, he divided them to a sufficient extent, to allow them to assume their elliptical form. After pressing these muscles, and the levatores, till he reached the depth of an inch, he substituted a bistoury for the scalpel, and proceeded to dissect upward, methodically, till he encountered the cul-de-sac of the rectum. The usual difficulty occurred after the operation, from the disposition of the orifice to contract; and when obstruction from this cause took place, the child several times discharged portions of fecal matter with its urine. By the use of bougies, and other measures, the anus was finally established, even to the folds of the external skin.

The principal object of the remarks, appended to this case, appears to be, the inculcation of the propriety of methodical divisions of the muscles, when present, instead of the blind digging sometimes practised.

The paper is accompanied by a view of the pelvis in section, and the course of the operation.

Next follows a case of luxation of the humerus downward and outward on to the back of the scapula beneath the spine; reduced after forty-five days; by M. Lepelletier de la Sarthe. This very rare accident has been considered problematical by many surgeons.

The author takes some notice of the instances which have been placed on record, and of the imperfect accounts given of the diagnostic symptoms by Dessault, A. Cooper, Roche, and Sanson, &c.

By Boyer, the accident has been represented as dependant upon a malformation of the glenoid cavity; but such appears not to have been the case with M. Lepelletier's patient, nor with that mentioned by M. Sedillot, (*Mémoire sur un luxation en ariere,*) whose description of the diagnostic marks, is considered the best extant, by our author.

In order to place our readers in possession of the appearances presented in M. Lepelletier's patient, we will quote his own description.

"An attentive examination enabled me to recognise the following symptoms. 1st. Decided inclination of the head to the right. 2nd. Slight deformity of the shoulder of the same side; visible at a glance. 3d. An increase of the transverse dimensions of the shoulder. 4th. Very slight flattening of the deltoid and prominence of the acromion. 5th. Obvious obliquity of the humerus from above downward, and from before forward; dragging of the whole member, in a state of semi-flexion in this direction. 6th. Approximation of the elbow toward the trunk in the obliquity; impossibility of this approximation, when the member was placed in a direction parallel to the torse. 7th. Lengthening of the member to the extent of nine lines, as measured from the elbow to the acromion. 8th. A round hard tumour in the direction of the humerus, near the superior external portion of the subspinous fossa. 9th. Absence of a similar tumour in the axillary cavity. 10th. A flattening of the shoulder in front, and, towards the middle of this depression, a prominence under the scapulary extremity of the cavicle, perceptible to the eye; and more especially very cognisable by the touch, and which we attributed to the presence of the coracoid apophysis rendered thus salient in consequence of the absence of the head of the humerus which masks it when in the normal state; an important arrangement, to which we call the attention of all practitioners. 11th. Very firm adhesions of the scapula to the humerus, the motions of which it followed, according to its changes of position. 12th. Freedom of the motions of the arm forward, difficulty and painfulness of the motions backward, impossibility of carrying the hand to the head."—p. 194.

In the reduction, it became necessary to break up the adhesions between the scapula and the head of the humerus, which gave way with an audible noise, and the reduction was then effected without difficulty. The patient, in a paroxysm of delight at the unexpected relief, made an unfortunate flourish with his arm, and reproduced the luxation; but it was again reduced, almost without effort, by the surgeon alone; and the arm was then prudently confined to the side. Although in M. Sedillot's case, a year and four days had elapsed after the accident, before reduction was accomplished, and yet the glenoid cavity remained capable of retaining the head of the humerus, some fears of a partial obliteration of the cavity were entertained in the present instance, from the facility with which the displacement recurred. The changes which take place in the bones and articular cartilages, from the mere suppression of their natural functions, are so tardy, that a material alteration in forty-five days, would have been a remarkable circumstance, and the complete perfect recovery of this patient, in fifty-four days, proved the anxiety felt on this account to be groundless.

Next follows a note on some novel means for re-establishing the regularity of the thorax in cases of lateral deviation of the spine, by M. Ravaz. The principal object of the paper is to point out the manner in which the rotatory movement of the vertebræ in lateral curvature, and the displacement of the ribs, which is a cause or consequence of that rotation, may be removed by the direct pressure of pads, &c. acting on the ribs themselves, and through them upon the spine.

These measures are designed to be auxillary to the extension usually employed, either in the horizontal, inclined, or erect position. Great care is taken in arranging the accessory machines, not to prevent the free motions of the weakened muscles, so necessary to the permanence of any mechanical results in the treatment of curved spine, and contrivances are appended to one of the horizontal machines, by which the patient is at liberty to act with the weakened muscles in the recumbent posture, the apparatus itself following all his motions.

The chief value of the paper before us, consists in the force with which the author defends the necessity of acting on the centre of the arches of curvature, as well as upon their extremities, and in the principle upon which he employs oblique pressure, instead of lateral pressure, in correcting the contortions of the thorax, using the ribs themselves as levers, and causing them to impress upon the transverse processes and bodies of the vertebræ the reverse rotatory movement to that which is caused necessarily by the lateral curvatures of the dorsal spine.

Next in order follow two papers on lithotrity, one containing an account of the operations of M. Ségarlas, with his peculiar instrument, (*Brise-pierre a pression et a percussion,*) read Feb. 4, 1834; the other entitled "Some Remarks on Lythotrity, by Dr. Civiale. Both these publications appeared before the recent much debated report of M. Velpeau, and their principal contents have already been placed before the public in various ways. The facts are mainly included in those which came under discussion, on the occasion just mentioned, and having been indirectly canvassed in a previous number of this Journal, we will pass them by for the present. Knowledge now reaches us in shreds and patches, with such amazing rapidity, that it would be well for the members of the French Academy and the lecturers of the London Hospital, to place their memoirs and lectures in type before they are read or spoken, if they wish to be the original chroniclers of their own ideas.

After two toxicological essays and a laboured article on tubercles, we again find ourselves in the midst of a group of surgical papers. The first of these is a case of fracture of several cervical vertebræ, by Mr. Lauth of Strasbourgh. The patient fell from a window of a second story in July, 1830, recovered with deformity and stiffness of the cervical column without paralysis, and died in December, 1833, of disease of the heart and pericardium.

Examination displayed the remains of an old fracture and its consequences. There was a strong re-entering angular derangement of the spine at the site of the fifth vertebra of the neck. The body of this bone had evidently been crushed, and its anterior edge had been totally absorbed, so as to allow the edges of the bodies of the fourth and sixth vertebræ to come in contact. The whole atlas was anchylosed with the occiput, and the bodies of the third and fourth were in the same condition. There was sufficient reason to believe that both these last named portions of bone had been partially crushed by the accident, but it is deemed unnecessary to enter into particulars. The

muscles of the back of the column were in a state of atrophy so complete as scarcely to be cognisable. The case is chiefly interesting as a proof of the great extent to which the spinal column may be injured by causes which alter its form but slowly without involving life; and, as a caution against pertinacious endeavours to perfect the diagnosis in accidents of this nature. What would have been the fate of the patient, if some officious operator had in this case attempted to produce crepitus!

We hardly know what to say to the paper of M. Silvy, of Grenoble—it describes a "complete obturation of the pupil of the left eye," produced by the remains of the capsule of the lens, after what is described as an awkward and violent operation for extraction through an insufficient orifice, by an itinerant and boastful pretender to skill in the treatment of cataract. The operation was followed by inflammation, and the vision, which was enjoyed for the moment, gave place to total blindness, for the other eye had been lost long before. This was produced, as it would appear, by fragments of the capsule, in a state of opacity, blocking up the pupil, without adhering to the iris. These fragments were afterwards reclined or depressed by M. Silvy, and the vision restored permanently. All this is very natural, and, we should suppose, proper; but the author goes into an argument as to the propriety of his operation, and defends it against certain supposed objections, which may be founded on the evidence of most of the great oculists, in favour of the solvent powers of the aqueous humour. M. S. grants the probability of the solution of portions of the capsule, when they preserve their transparency! but doubts it when they are thickened and opaque. We cannot understand how any membrane, still retaining its vitality, could be absorbed at all by this fluid, nor can we comprehend how, after having lost its vitality so as to become soluble, it can still retain its transparency while floating in an aqueous fluid. If these difficulties really exist, it follows, in reverse of the author's idea, that the membrane, like the lens itself, must lose its transparency even by the very process of solution.

It is now altogether unnecessary to quote Richter, Maitre Jean, Scarpa, &c., in proof of the solvent powers of the aqueous humour. What is well known to dissolve steel, and the solid portions of a lens, is not likely to be embarrassed by the density, or the opacity of a piece of capsule. But the connexions of the obstructing portions, their size, and the length of time for which they rest in the pupil, are circumstances of the greatest importance, in deciding on the propriety of their removal by a posterior operation. The first of these circumstances may cause the preservation of the vitality of the pieces of capsule, and their adhesion to the iris; (which latter accident, however, would not in every instance interfere with their depression, as M. S. supposes:) the second, may determine, particularly when in co-operation with the third, an inflammation of the iris from distension of the pupil: while the third, singly, might render the operation proper, by delaying too long the exercise of the proper functions of the organ. We have seen months elapse, before any very perceptible change

took place in a lens, divided or torn repeatedly with a Scarpa's needle, the pieces for the most part lying nearly in situ; yet after months had elapsed, we have seen that very lens absorbed with sufficient rapidity to promise a strong prospect of the perfect recovery of vision. In this case, a second operation was performed, and the eye was lost by inflammation, when it might have been preserved by patience. Still we are no opponents to repeated operations when safe, and when they hasten the progress of absorption.

The problem as to the propriety or impropriety of such an operation as that described by M. S., appears very simple. The aqueous humour will dissolve the fragments, if detached, but it may do so in a very tardy manner, and their presence may prove a source of serious accidents. Are the fragments in the pupil unaltered after an unusual length of time? The inference is plain—their vitality is preserved by their remaining attachments, and they should be either detached, or removed to a place in which they will not endanger vision nor embarrass the movements of the iris. Are they gradually becoming less? They will be absorbed with *time*, but if that time, and the form and position of the fragments produce a risk of serious accidents or very great inconvenience, then their position should be changed, and their absorption promoted, if necessary, by a subsequent operation.

The circumstances in which the capsule is placed, in cases like that under notice, do not differ essentially from those in which we find the lens itself in cataract. The opaque capsule, particularly when much lacerated, is more difficult to manage than the lens, but it is liable to nearly all the modes of operation employed upon the lens. M. S. depressed, and it would appear that he performed the operation wisely, skilfully, and successfully.

The complete luxation of the tibia, backward, described by M. Blanchard, of Rheims, a case full of interest, which follows next in order, has been already detailed in the Quarterly Periscope of our last number, but we may now venture to analyse the accompanying report of MM. Breschet, Gimelle, and Sanson. These able commentators combat the opinion of Boyer, his predecessors and disciples, that dislocation of the tibia, backwards, are produced by too great flexion of the limb. They point out the mechanical impossibility of such hyper-flexion, and they draw a correct distinction between the causes producing the two several forms of this luxation:—1st, that with flexion of the leg on the thigh, and impossibility of extension, caused by the forcing upward of the tuberosity of the tibia while the limb is flexed; and 2nd, that with severe undue extension of the leg on the thigh, shortening of the member, and impossibility of flexion, caused by the forcing backward of the tuberosity while the limb is extended.

The first of these accidents is the only one previously described by authors. It is extremely rare, cases having been witnessed and recorded only by Heister, Walshman, and M. Sanson. The second, pointed out theoretically by Sir A. Cooper, does not appear to have

been witnessed by any other surgeon than M. Blanchard, of Rheims, whose case is therefore unique.

The author of the observation seemed to consider the recovery of his patient without the destruction of the functions of the joint, as a proof that the accident may be attended with less severe injury to the ligaments, &c. than is generally supposed. The commentators very fully disprove this position experimentally, showing the constant disruption of the posterior fibres of the internal lateral ligaments, and injury to the neighbouring tendons and the aponeurotic envelope, (that of the rectus femoris alone retaining its integrity in all cases,) the occasional rupture of the external lateral ligament or dislocation of the upper head of the fibula, and the still more frequent tearing off of that part by the contraction of the latter ligament. The crucial ligaments being inevitably broken in all such accidents, were sacrificed in the experiments just mentioned.

The easy reduction and favourable termination of M. Blanchard's case, as well as that of the three others mentioned above, contrast rather strongly with the opinions expressed by most authorities on the prognosis of all luxations of the knee, and especially with the positive directions of M. Larrey, given in the very next memoir, always to facilitate anchylosis in such accidents.

"These facts," observe the commentators, "prove for the future, that in the most considerable displacements, the consecutive accidents are not always proportionate to the extent of the displacement, nor to the number and gravity of the lacerations which are produced. They contribute to establish the principle, that, whenever the articular surfaces are not laid bare, it will be proper to replace the parts in their natural position, to combat the primary accidents, and not to have recourse to an ultimate operation until circumstances determine its necessity."—p. 463.

The paper of M. Larrey, which has been already mentioned, will not detain us. It is founded on a case of compound lateral luxation of the knee, outward and a little backward, and nearly complete, with luxation of the patella outward, exposure of half the thickness of the internal condyle of the femur, and many serious bruises. The patient died without operation, on the fourteenth day of the accident, from pneumonia and cerebritis. The chief interest of the observation lies in the perfect facility with which the articular cartilage of an inflamed joint, denuded by slough, was examined, handled and incised. Neither pain, vascularity, nor swelling were at any time noticed, and the separation of portions took place by a scabby exfoliation.

R. C.

ART. XVII. *Practical Observations on Strangulated Hernia, and some of the Diseases of the Urinary Organs.* By JOSEPH PARRISH, M. D., pp. 330, and 4 plates. Philadelphia, Key & Biddle.

Dr. Parrish has divided his work into two parts; the first of which treats of *strangulated hernia;* the second, of diseases of the *urinary organs.* The following catalogue *raisonée,* will serve to convey some idea of the topics discussed in the two chapters included in the first part. The titles of the several chapters are, *Difficulties of the Diagnosis of Hernia; Treatment of Hernia; Diagnosis of Mortification; The Management of Mortified Bowel; Artificial Anus; Entero-epiplocele; Concealed Hernia; Umbilical Hernia; Strangulation within the Abdomen; Anomalous Cases.* It will thus be seen, that the author has given considerable scope to his range of topics, each of which is treated in the order indicated; if not with the fulness of detail necessary in a systematic treatise, still to a sufficient extent to confirm much useful and interesting matter. The intention of Dr. Parrish seems, indeed, not to have been so much to make a treatise for the benefit of the student or the junior members of the profession, as to embody his extensive experience for the advantage of his compeers, who have already had some opportunities of becoming acquainted, by study and observation, with the subjects of which he treats. Hence, many important topics are only noticed superficially; the author contenting himself with a brief exposition of certain axioms, and a detail of such cases as are suited to illustrate and give force to his opinions. The presumption expressed in the introduction, "that medical men, who engage in practical surgery, have acquired, by previous study and dissection, a competent knowledge of anatomy, will, no doubt, be generally found true when confined to the large cities; but the author's experience, both as a practitioner and medical teacher, must have convinced him, that there are many, very many, in the ranks of the profession, those too, who are constantly liable to be called on to manage the very accidents which form the subjects of his book, whose anatomical knowledge by no means qualifies them for the responsibilities they must unnecessarily incur in such situations. Such, at least, is the result of our own observation; and as Dr. Parrish could not have designed his work for city practitioners exclusively, we feel ourselves obliged to complain, that he has not given a short and intelligible description of the anatomy of the parts through which hernial protrusions take place. Such an addition would have been exceedingly valuable, and would have contributed in no small degree, to give greater force to many of the opinions advanced, and to add to the usefulness of the *observations.* The omission, we consider a serious defect; the more especially, as some of the occasional anatomical remarks made by the author, may tend, we think, to mislead those whose knowledge of anatomy does not qualify them to form correct inferences from them. We extract the following remarks in relation to

femoral hernia, which are certainly calculated to convey an erroneous idea of the situation of the parts, concerned in that disease.

"It will be recollected, that the great femoral artery and vein are contained in the same sheath which envelopes the hernia, and the epigastric artery should also be borne in mind. The last mentioned vessel arises from the external iliac, just as it passes under Poupart's ligament, where it takes the name of inguinal artery; hence its origin is very near to the outside of the reflected edge of Poupart's ligament, called Gimbernat's ligament, which is the seat of the stricture:—a very slight division of the ligament outward would separate the artery at its origin."

If the parts forming the covering of a femoral hernia be carefully dissected, it will be found that the hernia and the femoral vessels are *not* contained in the same sheath as the author has represented, and as was formerly believed, but that the protrusion takes place through the crural ring, which is situated between the femoral vein and the margin of Gimbernat's ligament, and which, in the natural state, is closed by a membranous expansion attached to the contour of the opening, denominated *cribriform fascia* by Cooper, and by Julius Cloquet, *crural septum*. This aperture is separated from the vessels by the inner portion of their sheath, and the occurrence of a hernial protrusion within, and along the course of the sheath of the femoral artery and vein, is exceedingly rare. The statement of the author, that the origin of the epigastric artery "is very near to the outside of the reflected edge of Poupart's ligament, called Gimbernat's ligament," is liable to be misunderstood by those unacquainted with the anatomy of the parts. Gimbernat's ligament forms a crescent, the edge of which looks outwards, towards the femoral vessels. The space comprised between this crescentic edge and the femoral vein, is the crural ring, which, in the male, increases from six to ten lines; in the female, sometimes an inch; and, as the artery is situated at this point, on the outer side of the vein, it follows that the breadth of the crural ring, (from six to ten or twelve lines,) and the diameter of the vein, must intervene between the outer *margin* (proper) of Gimbernat's ligament, and the origin of the epigastric artery. The outer margin of the crural ring is certainly very near to the origin of the epigastric artery, especially where the aperture is dilated by a hernial protrusion; and the proximity is rendered still nearer by the sweep made downwards and inwards by the artery, in the vicinity of the internal abdominal ring. It is this which renders that vessel liable to be wounded in dilating the stricture in femoral hernia upwards and outwards, and it is, doubtless, to this relationship between the parts that the author's remark is intended to apply.

No disease is perhaps more frequently mistaken for another, than colic for strangulated hernia. The symptoms of the two affections are so analogous, that the most experienced in the art of diagnosis are often unable to distinguish them, except by a careful examination of the groins, and the other points at which hernial protrusions usually occur. Few mistakes on the part of the practitioner involve such fatal consequences. While his whole attention is directed to what he supposes to be merely an attack of colic, a portion of bowel is pro-

truded and constricted; its circulation is arrested; and the mistake is not discovered, perhaps, until the strangulated organ is involved in gangrene, or the patient, as is too often the case, is allowed to die of a disease, which, if discovered in time, might be safely overcome by an operation. We have witnessed not a few such mistakes, and, we doubt not, that many individuals have fallen victims to what was supposed to be an attack of colic or intussusception, who were, in reality, destroyed by strangulated hernia, which was not discovered, because the practitioner neglected to make a proper examination. Dr. Parrish has reported a very interesting case in which such a mistake was made, and impressed, as we are, with the consciousness of the frequent occurrence of fatal accidents from similar negligence, we are of opinion that the author has not, in his whole book, laid down a more important precept, than that which enforces the propriety, *in every case of colic, of suspecting strangulated hernia.*"

Another point upon which fatal mistakes are often made, is in attaching too much importance to fecal discharges, where symptoms of strangulation exist. Many practitioners are apt to suppose, that if feces and flatus are discharged from the lower bowels, strangulation cannot exist. It should be remembered, however, that these may proceed from the portion of the intestine situated below the seat of stricture. In many cases, moreover, it is very properly conjectured by the author, that the frequent use of injections, especially when administered by the pipe and bag, may introduce a considerable quantity of wind into the bowel, which being returned with more or less fecal matter, may convey the idea, that no obstruction exists. The cases adduced in illustration of this truth, show clearly the necessity of great caution, and especially indicate the necessity of attaching no great importance to the discharge of feces and flatus, so long as the symptoms of strangulation remain unalleviated.

Amongst the diseases resembling hernia, the following case is an example of one of rather uncommon occurrence.

"The patient was an old coloured man who, some years ago, was brought into the alms-house infirmary, labouring, as was supposed, under strangulated hernia. He was affected with vomiting, severe pain in the abdominal region, tympanitic abdomen, tenderness on pressure, and obstinate constipation. It was ascertained that he had been affected with rupture for many years; and that strangulation had taken place occasionally. There was a distinct tumour in the groin.

"Under these circumstances, a consultation of the surgeons of the institution was called to decide on the propriety of an operation, and the students were collected to witness it. I recognised in the man an old Dispensary patient, whom I had frequently attended; and recollected that, on one occasion, I had seen him in an attack of strangulated hernia, and had reduced the parts by taxis. On a close examination of the tumour, we were all struck with its flabby and inelastic feel, differing very much from the firm and elastic feel of a strangulated hernia. As the case was obscure, it was concluded to postpone the operation until further light could be thrown on it. The next day, the friends of the patient removed him from the infirmary, and Dr. Hewson saw him. The symptoms continued unabated, and the patient died.

Dr. Hewson obtained permission to examine the body, and found that the

tumour was caused by a hernial sac very much thickened by chronic inflammation. This old sac had been affected with recent and violent inflammation, which had extended to the peritoneum, and involved it also in general high inflammation."

The observations "on the means of reduction employed before the operation," are judicious, but as they add nothing to our stock of information on that subject, we shall pass them over. We shall pursue the same course, in relation to the directions given by the author for the performance of the operation. We may remark, however, that Dr. Parrish, with the view of maintaining the flexed position of the limbs after the reduction, recommends an angular box and a pillow under the thighs and legs of the patient. Should the bowels continue constipated after the first effects of the operation are over, small doses of castor oil with enemata may be safely resorted to, but the author cautions against the employment of rigorous measures, to prevent apprehended danger after the operation. He remarks:—

"It should ever be borne in mind, that the system has received a severe shock—and after the removal of the cause which produced it, some time should be allowed for agitation to cease. Hence, mild and soothing treatment, with occasional opiates, will be more likely to produce a happy result than an indiscreet resort to rigorous antiphlogistic means."

The question of the propriety of returning the hernia, after the division of the stricture, without opening the proper sac, is not yet settled. Notwithstanding a majority of the best surgeons recommend that the sac should be opened, there is very respectable authority in favour of an opposite practice. Mr. Key, of Guy's Hospital, has lately published a work, in which he strongly enforces the propriety of returning the hernia without opening the sac, and there are several surgeons of the present day, who recommend the adoption of that procedure. It can unquestionably be practised in some cases with great ease and safety; yet it must not be concealed, that, in many instances, it is impracticable, and some in which it would be attended with great hazard. In the course of a little more than twelve months, we have operated on four cases, two of inguinal and two of femoral hernia, in which, after dividing the stricture, as we thought, completely, we could not return the hernia, until the sac was opened. But could the protruded organ be returned in all cases, serious objections may be urged against such a method of operating. A mortified intestine might be returned into the abdomen; a stricture may exist in the neck or some other portion of the sac, or the adventitious bands and adhesions which so often form between the convolutions of the intestine, the protruded omentum, &c. Under such circumstances, the strangulated organ would be forced into the abdomen, and the operation, instead of relieving the symptoms, would be followed by an exasperation of all the mischief. There are no necessary objections against the practice of not opening the sac; many valuable lives have been lost by the adoption of such a procedure, and when these grave consequences are duly considered, we think they ought not to be allowed to weigh against the trifling risk of peritoneal inflammation and other accidents, which have been urged as an objection against the usual

method of operating. We fully concur with Dr. Parrish in his disapproval of returning the intestine or omentum without opening the sac to ascertain the condition of the parts within. He cites a very interesting case, which, though not operated on, affords a strong illustration of the propriety of the rule of practice recommended by him. An individual affected with urgent symptoms, was found, on examination, to have a hernial tumour, as large as a goose-egg, on the left side, the point at which he experienced the most violent pain. This was finally reduced, so as not to leave a single vestige of the tumour. A couple of hours afterwards, however, all the symptoms of strangulation were removed, and, notwithstanding all that was done for the relief of the patient, the case terminated fatally. Dissection revealed the true nature of the case, and confirmed a suspicion previously entertained, but which, unaccountably, did not have sufficient weight in the minds of the attending physicians, to lead them to perform an operation, which might have relieved the patient, if timely executed.

"On opening the abdomen, we found the whole mass of the intestinal tube, commencing at the strictured part and extending upwards, distended with air: the vessels of the omentum, as well as those of the mesentery, very much injected with blood, and the greater portion of the intestines bearing evident marks of inflammation. The seat of the disease, however, was confined to the jejunum, which, for the length of twelve inches, had lost its colour, and was in a complete state of sphacelus. A portion of this intestine was confined in the inner portion of the abdominal ring, where the hernial sac formed a stricture round it, which having also participated in the general mortification, was totally disorganized, and could easily be torn away by the nail. So complete had been this adhesion, that when it was ruptured by a very slight effort, a hole in the intestinal canal, about the size of a shilling, was produced. We also noticed another hole near it, of the same size, having all the appearance of an ulcer. Having cut open the intestine at its most diseased point for a few inches, pus, and a remarkable black appearance on the internal coat, were observed. A remarkable spot about the size of a half dollar attracted our attention. It was situated about the middle of the transverse portion of the colon. It was very evident to us, that the intestines contained in the right side of the abdomen, but more particularly in its lower region, had been the seat of a more extensive and acute inflammation than those situated on the left. The inguinal ring, which was diseased, as we have already noticed, on the left side, had protruded in the abdomen as much as an inch, by the increase of its volume."

It is well known to those who have often performed the operation for strangulated hernia, that much embarrassment is sometimes experienced in distinguishing between the hernial sac and the intestine. Dr. Parrish reports a case in which a difficulty of this kind was occasioned by the presence of a layer of coagulated blood between the outer surface of the sac, and the adjacent layer of fascia. The nature of the case was, however, soon ascertained, and, after opening the sac, the strangulated intestine was liberated and returned. In another instance, in which Dr. Price operated, the parts were found gangrenous, and, after some little delay in attempting to decide whether the part which presented was sac or intestine, a part of what was finally considered by all to be a portion of the sac, was pinched up and divided, when it was found to be the coats of the intestine, altered by gangrene. The patient, however, finally recovered.

The following case is an example of stricture within the sac.

"I was called (this day) in consultation with Drs. Betton and Moore, to visit a labouring man, at Peter Robinson's mill, Roxborough. The patient had a small strangulated rupture on the left side. It could scarcely be called scrotal, but was rather a bubonocele. He had been bled very freely, and various unsuccessful efforts had been made to relieve him by Drs. Betton and Moore. The strangulation had existed between seventy and eighty hours.

As we were all united in opinion that no time was to be lost, and as the patient consented to the operation, a dose of laudanum was exhibited, and, with the assistance of my medical friends, I proceeded to perform it.

After making the usual incision through the integuments, and taking up several small arteries, I came down to the hernial sac. It was found to be thickened, and contained no fluid. Here a difficulty arose; and much care was required to avoid wounding the parts within the sac. It was soon ascertained, that the patient had an irreducible omental hernia, closely adhering to the sac. It required no little time and great care to separate the adhesion and expose the omentum. After this was accomplished, no intestine was apparent, although the symptoms of strangulated bowel were clearly marked. It was soon discovered that there was a small but very tight stricture in the hernial sac itself, not far from the abdominal ring. This was divided by the aid of a small director and bistoury. It was not until this was accomplished, and the parts were unbound, that the real character of the case was made to appear. The liberated omentum was laid on one side, and a small portion of strangulated intestine was exposed. But the difficulty had not terminated even now, for the intestine was still bound by a stricture at the abdominal ring, which I divided with the blunt-pointed bistoury and director. The intestine was inflamed, but not gangrenous. The omentum was of a dark colour. I now reduced the intestine without difficulty, and it was concluded that the omentum should remain undisturbed. The wound was dressed, and the patient put to bed. I left him under the care of his medical attendants. He recovered most happily, and called on me, not long afterwards, in the city."

It sometimes happens, after the stricture has been removed by an operation, and the intestine returned, that the bowels remain obstinately constipated, and no feculunt evacuations can be induced. This may depend upon a variety of causes, but in a case which fell under our notice about two years ago, the difficulty was of a character not generally suspected in such cases. We were called upon by our friend Dr. Baer to operate on an elderly lady for a strangulated femoral hernia of the right groin. The operation was performed in the usual manner, and the intestine, (a portion of the ileon) which was much inflamed and adherent to the sac, was liberated and returned without difficulty. All our means to excite discharges from the bowels proved ineffectual, and the patient, being advanced in years and very feeble, sunk after the expiration of some hours. Fearing that a portion of the intestine which had been returned might have still remained strangulated, permission was obtained to examine the body. On laying open the abdomen, the part of the ileon which had been contained within the hernia was found perfectly free, of its natural volume, and only distinguishable from the rest of the tube by its red inflamed appearance. The whole extent, however, of the segmoid flexure of the colon was found violently inflamed, and so firmly contracted, apparently by spasm of its fibres, as to preclude the passage of the feces downwards, and interrupt the transit of the injections which had been

employed during life to excite the action of the bowels, they being returned as soon as thrown up.

For the relief of this obstructed state of the intestines after an operation, Dr. Parrish recommends mercury introduced into the system in extremely minute portions. Calomel, in the dose of a quarter or one-sixth of a grain, given every one or two hours, is the form he recommends. Several cases are detailed by the author in which the symptoms of strangulation did not yield until *"the gums were touched by the use of small doses of calomel;"* and in one, fecal discharges were not induced until eight days after the operation, yet the patient recovered.

It is customary in the books to indicate a certain series of symptoms as characteristic of mortification of the strangulated intestine. In practice, however, it is often found that all such characters are fallacious; instances being of frequent occurrence in which the usual symptoms supposed to indicate the existence of gangrene are very manifest, yet on opening the sac the organs are found to be still possessed of vitality. Occasionally, indeed, cases occur in which, after all reasonable prospect of recovery seems to be at an end, all the symptoms being of a character to lead to the supposition that the parts are profoundly involved in mortification, the hernia returns spontaneously into the abdomen, or is reduced by art, and the patient is restored to health. On the other hand, the bowels sometimes become gangrenous in a few hours, even when the symptoms of the case are by no means urgent, and the surgeon is surprised on opening the sac to find its contents completely mortified. Dr. Parrish has discussed the subject of mortification of the intestine from hernia at some length, and has detailed several interesting cases in which the organs were found in this condition. He "considers *an ash coloured and shrivelled or collapsed state of the intestine* as a much more certain indication of its death than any of the signs yet enumerated." Another evidence of mortification which he regards as conclusive, "is the peculiar cadaverous odour emitted by the contents of the sac when opened." "Often," says he, "have my olfactory nerves afforded decisive evidence of the melancholy fact that mortification had taken place, before my eyes have had an opportunity of giving it additional conformation."

The following interesting case, communicated to the author by Dr. Condie, forcibly indicates the possibility of recovery even under the most threatening circumstances. We shall omit part of the details, and merely extract the description of the condition of the patient in the advanced stage of the disease, together with the termination, and the means by which it was brought to a fortunate issue. The individual was a female about fifty years of age, extremely ignorant and obstinate. She had been for some time affected with reducible femoral hernia, which, on the 10th of October, 1832, while the patient was engaged in some laborious occupation, became suddenly strangulated. Dr. Condie, who was called, resorted to the ordinary means of relief employed in such cases, which were persevered in without success—

the symptoms all the time being exceedingly urgent, and the patient resolutely opposed to an operation.

"On the morning of the 12th," says Dr. Condie, "I was sent for in great haste. I found the patient in a state of great prostration, with a small, feeble pulse; cold clammy skin; contracted features; and throwing up from the stomach at intervals, a dark green fluid. She complained of very little pain, excepting when the abdomen, or hernial tumour was pressed upon. The latter, which had been previously tense and elastic, had now a somewhat doughy feel. The vomiting of green fluid was succeeded, in the course of the morning, by discharges from the stomach of fecal matter in considerable quantities.

"The patient now expressed a wish that Dr. Parrish might be called in. This wish was immediately complied with, and the doctor attended in the afternoon, accompanied by his son. The features of the case were now, in our opinion, such as to render all chance of recovery utterly hopeless; and I am convinced that any medical man would have concurred with us in this opinion, had he examined the prostrate condition of the patient—the cold, clammy skin—the feeble, and almost extinct pulse—the sunken and contracted features—and the fecal vomiting.

"It was decided that from an operation under such circumstances, but little benefit could be expected: it was agreed, however, to give the patient this doubtful chance of relief, provided that, after a candid statement to her, of our views of the case, she should request it. She, however, positively refused to submit. It was agreed, on separating, that I should inform Dr. Parrish in the morning, of the condition of the patient.

"On calling the next morning to see the patient, I found her still alive, and that she had called in a black man, celebrated in the Neck, (*the low country south of the city,*) as a 'curer of ruptures' *both in men and in cattle.* I remained, being somewhat curious to watch his proceedings. The hernial tumour he had covered with a poultice of bruised herbs—*the leaves,* so far as I could judge by the smell, *of stramonium*—and he was preparing an infusion of herbs to be used as an injection. This infusion was evidently of senna leaves. The injection he proposed to administer every fifteen minutes, by means of a very large and very powerful syringe. He spoke confidently of the successful result of the case.

"I saw the patient again on the following morning, and, to my utter astonishment, found her in a tolerably comfortable condition! The hernia was reduced; all the alarming symptoms, under which she had laboured on the preceding day, were gone; and, though extremely weak, she was evidently in a fair way of recovery! I learned, that after continuing the injections for nearly two hours, there occurred a copious evacuation from the bowels of a number of hard balls; and that then, suddenly, the tumour had disappeared with a gurgling noise. These balls had been preserved for my inspection; they were formed of hard, dark-coloured feces, of different sizes, from that of a pea to that of a pistol ball, or even larger.

"The patient continued daily to amend, and at the termination of *ten days* from the reduction of the hernia, was seen by me *sweeping off her door!*"

We pass over the subjects of the treatment of mortified intestine, artificial anus, &c., to notice what the author has been pleased to denominate "*expatriated omentum;*" a strange term, truly, to be applied to one of the organs of the abdomen, and which the author has, we think, very correctly observed, may occasion some readers to smile. The condition of the omentum which Dr. Parrish thinks receives "a brief but just illustration" from this term is, that in which this organ "is very much altered from its original structure, from the fact of its having been long excluded from the abdomen." We think we understand the author's meaning; but certain we are, that we are not indebted to this fallacious term for the justness of our conceptions;

nor do we conceive that it is in any wise better calculated to afford either "a brief or just illustration" of this condition, than the applications of expatriated intestine, expatriated brain, or expatriated femur, would afford of an enterocele, a hernia cerebri, or an old dislocation at the hip joint. We beg leave to enter our protest against the introduction of all such terms into our vocabulary, and we unhesitatingly do so, lest from the force of example, we should have all our organs sent into exile, by the lucubrations of some future son of Esculapius.

But to resume the consideration of the subject itself;—the author asks, what is to be done with expatriated omentum? If, says he, a small portion presents itself, and can be conveniently cut off, no danger need be apprehended from hæmorrhage; but when a large mass is encountered, it has generally been my practice to allow it to remain undisturbed. That cases may occur, in which it will be proper to excise a portion of the omentum, we will not deny, but we are convinced that such instances are comparatively rare. The practice of drawing a tight ligature round the root of the omentum, and then cutting it off in front of the point at which it is tied, is properly condemned by Dr. Parrish; and he considers the plan adopted by Potts, of excising the omentum, and returning the sound parts into the abdomen without tying the vessels, as unsafe. He nevertheless reports several cases, in which a small portion of the altered mass was cut away, without leading to a fatal result, and one still more important, in which it became unnecessary to secure one vessel by ligature.

We extract the following case of concealed hernia, as well on account of its importance, as the singular condition of the strangulated intestines.

"9th mo., 1818. I was lately called in consultation with Dr. Perkin, to visit J. E., a middle-aged man, corder at Race street wharf. I was informed, that four days previous to my visit, he had been seized with constipation of the bowels, pain, and vomiting. All efforts to relieve him had utterly failed. My first question was, has he been afflicted with rupture? The doctor said he had examined the groins, but could discover nothing—though the patient had been the subject of hernia.

"I now made a very careful examination, and could find no tumour. The patient himself believed that his rupture had no concern in his symptoms.

"We met again in a few hours; and found that the patient had been sinking rapidly. At our next visit, a few hours after, he had a cold, clammy sweat, with a feeble pulse; tense and tumid abdomen; an absence of pain. His stomach now retained every thing that was given.

"I again examined for hernia, being convinced that the symptoms strongly indicated it; but I was satisfied that nothing had passed the abdominal ring. I then remarked to Dr. Perkin, that perhaps strangulation might exist at the internal ring; but as there was no tumefaction to guide us to the part, we did not consider it justifiable to cut down into the abdomen; merely upon conjecture. A few hours after this visit the poor man died.

"*Dissection.*—Dr. Perkin dissected the body, and informed me, that he found a hernial sac below the ring, but it did not descend low in the scrotum. About five inches of intestine was found in the sac in a state of strangulation; it was of a very dark colour, but not actually mortified. The bowels above the stricture were enormously distended with flatus, but the portion within the sac was flaccid, and its sides were in contact."

As the operation proposed by Dessault, for the radical cure of umbilical hernia is not now often performed, we extract the following

successful case, with the remarks of the author, in the justness of which we fully concur.

"Dessault has recommended a plan for the radical cure of umbilical hernia, which he has frequently performed, and considers quite safe. I pursued this plan many years ago, in a case in which I was concerned with Drs. Wistar and Physick. The case resulted favourably, though not without considerable anxiety on our part. It is detailed in this place, not with a view of recommending the operation, but to show that it is not, in every instance, so trifling an affair as one might be led to conclude.

"With my present experience, I would not repeat the operation in a similar case, but would prefer relying on the efforts of nature, with an observance of the directions just noticed.

"Case XXXVI.—*Umbilical Hernia—Radical Cure*—10th mo. 31st, 1810. S. A., aged about twenty-two months, has had an umbilical hernia from his birth. This day in consultation with Drs. Wistar and Physick, I commenced an attempt to produce a radical cure according to the plan of Dessault. Dr. Wistar took the tumour between his fingers, having first returned the contents of the sac. I now passed a ligature three times round the base of the integments and the sac, and secured it at each turn by a double knot. The ligature was only drawn tight enough to give an inconsiderable degree of pain; the child did not cry.

"11th mo. 1st. The child has not appeared to sustain any inconvenience. His bowels are rather lax. He is kept on a soft vegetable diet, especially rye mush. The tumour looks a little faded in colour, and rather shrunken. It now appears as if the parts were disposed to form another sac behind the one which has been inclosed in the ligature; but as pressure on this protruded part does not cause it to return, there is reason to believe that it is occasioned by the cellular membrane being a little inflamed and thickened.

"2nd. The patient is still free from pain and uneasiness. On inquiry, it appears that he rubbed off the ligature this morning: an inflamed ring marks the place where it was applied, and the integuments containing the sac are certainly a little thickened. While fixing him for the purpose of applying the ligature again, he became restless and cried; but it really appears as if the protrusion of the bowel is not so great as before the first application.

"The integuments were now taken hold of by Dr. Wistar, as before, and I passed the ligature rather below the place where the previous one had been applied, and secured it by three turns, with a double knot on each turn, drawing it considerably tighter than before. This ligature gave rather more pain than the first, but not a great deal.

"3d. The ligature retains its situation very well. The lower part of the tumour appears of a purplish hue. The tumour itself is rather tense. The patient does not appear to sustain any material inconvenience; he plays about, and is very lively.

"4th. The tumour seemed a little shrunken, and it was concluded to pass a ligature sufficiently tight to intercept the circulation. This was accordingly done, without removing the other ligature. It gave considerable momentary pain, but it appeared soon over.

"5th. The tumour looks black. A vesication filled with bloody-coloured serum has been formed near its base.

"8th. The ligature retains its situation. The vesicated part has dried completely, and the whole surface of the tumour is of a light-purplish colour. It appears to be rather hard. On puncturing it with a lancet, it did not bleed, but the tumour has not shrunk.

"11th. The exterior covering of the tumour appears to have sloughed away, leaving a living surface beneath, from which some pus escapes; and pus is also formed about the ligature. Some slight inflammation is apparent in the skin near the tumour; for this I directed a poultice containing some lead-water.*

* About the time of the application of the poultice, the extent of the ulcerated surface caused me considerable uneasiness; had the child been attacked with severe cough, or long-continued crying, there would, I believe, have been some risk of a rupture of the new-formed parts, and consequent protrusion of the bowels.

"15th. *Morning.* The poultice has been continued until this day. The ligature has gradually cut through the greater part of the integuments, leaving the sac nearly bare, and a considerable cavity in the integuments. *This has not a pleasant appearance.* I now passed the last ligature round the tumour, and drew it quite tight. On visiting him in the *afternoon*, for the purpose of applying adhesive strips, so as to give as much support as possible to the parts, I found that the integuments had gradually contracted since the poultice had been removed, and I believe that the poultice was certainly the cause of the parts looking so relaxed, and the ulcer so large, as they did in the morning. The child still enjoys fine health and spirits.

"16th. The ligature and tumour came off this morning, leaving a small aperture and granulations over its surface. A piece of adhesive plaster was applied over the part, compresses placed on it, and a bandage carried over the whole, to complete the dressing.

"Cicatrization took place very soon, and the cure has proved complete."

The second part of the work before us, is divided into five chapters, the subjects of which are, *Retention of Urine; The Catheter; Stricture of the Urethra; Tic Douloureux of the Urinary Bladder; Nephritis.* Many of these topics we shall be obliged to pass unnoticed. The following statement in relation to diseased prostate deserves notice.

"Dr. Physick was consulted in the case of an elderly gentleman of this city, who has laboured for nine years under a disease of the prostate, and has suffered severely from occasional attacks of retention of urine, requiring the use of the catheter. On a late occasion, Dr. P. was called to him, suffering under an unusually severe attack, the continuance and severity of which had almost exhausted him. He prepared a small flexible catheter, to the extremity of which was attached a portion of very thin bladder, firmly secured by silk thread, which was covered with wax. The instrument thus prepared was introduced without much difficulty into the bladder. Warm water was then injected through the catheter, and the bag thus distended. An attempt was then made to withdraw the instrument. As the distended bag entered the passage through the prostate, considerable pain was produced; but it was allowed to remain for some minutes in this situation, and was finally brought through by gradual means. Some blood flowed on withdrawing the instrument. The operation afforded speedy relief, the health of the patient rapidly improved, and he remained free from a return of his symptoms for more than a year."

All experienced practitioners are aware of the difficulty and embarrassment experienced in the management of such cases. Any suggestion, therefore, calculated to relieve or mitigate the poignant sufferings of the unfortunate victims of this form of disease, deserves to be attentively considered, and honestly tested, even though the range of its application, or the extent of its usefulness, be limited. For this reason we extract the following remarks, premising that, notwithstanding the benefit experienced in the particular cure, and the favourable opinion of our author, we should feel some reluctance in resorting to such a course of treatment. The case in question was treated by Dr. Wistar.

"He tapped the distended bladder of an elderly gentleman above the pubis, in consequence of his inability to introduce a catheter; the difficulty being caused by an enlargement of the prostate gland. In this instance the patient wore a gold tube, in the opening made by the operation, through which the urine was discharged without difficulty. From having been the subject of great suffering for years, he was by this means enabled to enjoy comparative comfort; his health improved, and was so far restored that he was in the practice of riding out to his country seat, several miles from the

city, not only in his carriage, but sometimes on horseback. Nearly two years elapsed under this favourable change. In the interim the diseased prostate had so far recovered, that the patient could pass water through the urethra freely and without pain. Thinking that the disease was cured, he removed the tube, and relied entirely upon the natural passage. The consequence was, a renewal of the disease in the prostate, of which he finally died. A small fistulous opening continued above the pubis, but the bladder never rose sufficiently high to admit of a repetition of the tapping, and the tube could not be replaced."

The following extract will serve to show the favourable opinion of this procedure entertained by Dr. Parrish.

"Possessing, as I do, but little confidence in the remedial agents employed for the cure of enlarged prostate, and viewing even palliative means, in some instances uncertain, I have arrived at the conclusion, that if, in the dispensations of Providence, I should ever be subjected to this malady, I would certainly avail myself as a last resort, of the operation of tapping the bladder above the pubis. It would be far preferable for a man in advanced life, to be subjected to the inconvenience of wearing a tube, through which his urine could be discharged, than to be afflicted with a painful malady, by which he would be led to a slow and painful death."

Having run thus hastily over the several topics embraced in the work before us, we must bring our analysis to a close. We have endeavoured to select the most important subjects for notice, and have in most instances stated our author's views, without comment. The work is almost purely practical, and coming as it does, from a highly distinguished member of the profession, of long and extensive experience, we have refrained, in some instances, from expressing objections, because we were unwilling to oppose our humble opinions to those of one whom we feel convinced, allows himself to form no hasty conclusions. Only in a few instances, however, candour compels us to confess, have we found any grounds to differ from the author—his book consisting for the most part, of the fruits of his own extensive experience, and the exposition of such practical precepts, as may be legitimately deduced from the materials furnished by his own book. On these grounds, Dr. Parrish's labours merit the attention of the profession. We feel convinced, that in publishing his observations, he has been actuated by a desire to benefit suffering humanity. But while we appreciate highly his benevolent purpose, a sense of duty compels us to say, that we do not think he has added materially to our stock of knowledge on the subjects of which he has treated.

E. G.

# BIBLIOGRAPHICAL NOTICES.

ART. XVIII. *An Attempt to Investigate some Obscure and Undecided Doctrines in relation to Small Pox, Varioloid, and Vaccination.* By LUTHER V. BELL, M. D., of Derry, N. H. Published in Boston, 1836. 8vo, pp. 72.

This publication contains the results of the author's personal observations, made during several years' extensive attendance on variolous epidemics; and interests us, not only from the high merits of the writer, but from the almost constant existence of the small pox among us. For upwards of thirty years, variola was almost an unknown disease in this, and we believe, in every other portion of our country; and seemed scarcely to require the student's attention, further than was necessary to satisfy curiosity in regard to a malady, which had destroyed so many, and left such indelible marks upon those whose lives had been spared. Now, however, it behooves all connected with the profession, to study diligently, not only the disease, as described in the older authorities, but as modified by recent unaccountable agencies.

We shall briefly advert to a few of the interesting points treated of; and first, the question, *whether small pox is ever of spontaneous origin?* The facts bearing upon this question, the author does not regard as sufficiently numerous to justify a positive decision; hasty conclusions from a too limited number of facts, having, as he very justly observes, ever been the bane of medical philosophizing.

He states, however, that in the greater proportion of variolous epidemics which have occurred in New England, within the last two or three years, hardly a single one could be traced to an unequivocal source of contagion, although investigated with the utmost strictness. He refers particularly to three instances, to which his attention had been directed within the last year, that were accompanied with such circumstances as to form, at least, some ground for the belief in the occasional spontaneous origin of the disease.

In regard to the question—to what extent small pox is capable of being transferred by personal communication, &c.—he brings evidence of a negative kind, sufficient to show, that the disease, if communicable at all from the contagion adhering to an individual, is by no means readily so. Such a conclusion, certainly accords with the ample experience of the practitioners in most of our cities, and a happy circumstance it certainly is, for them, and the community at large.

But the most important topic is the one relative to the modification produced on small pox by vaccination; in considering which, he adduces several very conclusive facts, in proof of the identity of varioloid and small pox, so far as the production of each other is concerned. Among other cases, we find the following:—

"A young woman, 22 years of age, was vaccinated when a child. She was attacked with the usual symptoms of modified small pox. For the first few days,

the fever was severe; on the third an eruption appeared, amounting to about a hundred pustules on the whole surface. They soon after became vesicular, then horny or crystalline, and soon after disappeared. Six weeks after, she was delivered of a dead male infant of five months, covered with marked small pox eruption. The pocks, which in number exceeded one hundred, were elevated, flat on the top, and from one-eighth to one-fourth of an inch in diameter, and uniformly had a depression in the centre. The fœtus, still in possession of Dr. Bogert, has been seen and examined by several medical men, who have unanimously pronounced it a case of pure small pox, apparently at the third or fourth day of eruption."

"A very interesting case of small pox in the *fœtus in utero*, occurred in my practice last spring, at Candia. Mrs. R., advanced to the seventh month of pregnancy, was seized with small pox, which assumed a very confluent form. Notwithstanding a conjunction of severe moral and physical shocks, (having lost her husband and eldest daughter during her own attack,) abortion did not occur. Dr. Samuel Sargent, her ordinary attending physician, has lately informed me by letter, that at the expiration of her full term, she was delivered of a healthy child, whose abdomen and thighs are marked with decided small pox pittings, and which was insusceptible of the vaccine disease."

The proportion of persons attacked with small pox or varioloid, after *undoubted* vaccination, appears to have been far less numerous in the practice of Dr. Bell, than it would seem to have been in Europe, from the reports made there within the last twelve or fifteen years. Of the degree of immunity from death by small pox, afforded by the vaccine disease, he says, "the evidence is conclusive and overwhelming; enough to sustain the triumphant character of the discovery and its author, and to put to shame the few, who have dared, in recent times, to propose relinquishing it for the former practice of inoculation. *The general rule is*, (the assertion may be safely hazarded,) *that the vaccine disease is a perfect security against death from the small pox.* The few undoubted instances of a fatal result are exceptions, only enough in number to strengthen it; the proportion being, probably, not one in thousands."

He states it as the result of his personal experience, that no instance of death, when vaccination was made prior to exposure, has occurred in more than two hundred cases of variolous disease attended by him, and a very large number of other cases he had witnessed. In some few instances a slight pitting ensued; not sufficient, however, to produce disfigurement of the countenance.

Dr. Thompson, in his account of the variolous epidemic, which appeared in Edinburg, and other parts of Scotland, speaks of the occurrence of varioloid in persons who had neither had small pox nor the vaccine disease. Other writers upon the subject have made similar observations; but our author's experience has not furnished him with any cases calculated to verify such an opinion.

On an unexpected irruption of small pox, it becomes a point of deep interest to the unprotected, to know how long after exposure, they may secure themselves by vaccination. It is familiarly known, that when the small pox and vaccine matters are inserted at the same time, the small pox is either mitigated or entirely prevented; and hence, the propriety of vaccinating in all cases previous to the occurrence of disease, where persons unprotected have been exposed to small pox contagion. Our author states, that he has the minutes of cases, in which there were no evidences of vaccination having taken effect, until the individuals had been exposed seven, eight, nine, ten, and eleven days to small pox, in its most malignant form,

when the succeeding varioloid was of the mildest character. In these cases, however, the patients had been placed on a precautionary treatment and diet, and were usually vaccinated daily, until it was evident the vaccine matter had taken. He mentions this curious fact, as the result of his own experience and repeated observation,—that persons exposed within a variolous atmosphere are very insusceptible of the vaccine disease. This insusceptibility to vaccination, leads him in cases where small pox occurs without the possibility of procuring vaccine virus in proper time, to recommend inoculating with small pox, such unprotected persons as have been decidedly exposed to its contagion; a recommendation which, however, we think should not be thought of, unless the persons inoculated can be excluded from all others; for should they be scattered among the community, the evil would be multiplied instead of diminished.

Our author considers himself warranted in the general inference, that *small pox is not communicable during the eruptive fever, nor in the early period of the eruption.*

Upon the subject of the causes of failure in vaccination, to prevent the small pox, he admits, that although there is no doubt that cases of small pox, and modified small pox after vaccination, were not infrequent from the very first periods of cow-pock inoculation, there exists the most authentic proof of the constant increase of their proportion. And this naturally leads him to examine the interesting questions,—what are the reasons for this deterioration in the protective powers? Has the vaccine virus become deteriorated in its character, by the succession of individuals it has passed through?

He declares himself satisfied, that no deterioration of the vaccine virus has taken place from its passing through individuals in a long succession, from the following reasons:—"1. The absence of evidence of any superiority of protection in the vaccine matter. 2. From the supposition of a deterioration being irreconcilable with the phenomena of small pox, which loses none of its virulence by repeated inoculation; however long it may have been transferred in this way, whenever it is received into an unprotected subject its character is unchanged. 3. The appearance, progress, symptoms, and resulting cicatrix of the cow-pox from the virus now, is precisely similar to what it was thirty-five years ago in this country and in Europe; and here, at least, no pretence can exist that the natural source has ever been recurred to."—p. 45.

In a report made in 1833, to the French Royal Academy of Medicine, the results of experiments are given, tried by M. Fiard, for the purpose of reproducing the vaccine virus from the cow. Soon after the adoption of the practice of vaccination, it was stated that the virus could be transmitted from the human subject to the cow, and vice versa; but M. Fiard was unable to inoculate more than six or seven cows of seventy, upon which he experimented; in addition to this, the eruption was excessively feeble, and the matter, when re-inoculated on children never produced any effect. M. Fiard, even procured cow-pox matter from England; with which, however, he did not succeed in France, in producing the disease in the animal. M. Fiard, argues from the results of his experiments that, if no degeneration had taken place in the vaccine virus, it ought to possess the property of being transmitted from the human subject to the cow, and the reverse, as readily at the present day, as when vaccination was first promulgated. This

is certainly a plausible inference; but we think no more can be said of it; believing, as we do, in the arguments just quoted from our author, in support of its non-deterioration. The efficacy of the vaccine virus, like that of the variolous itself, to protect the system against future attacks, seems certainly impaired from some cause or other; but to assign the mysterious circumstances connected with this and other exanthematous disorders, is more than can be done in the present state of knowledge; and, therefore, when asked a question, which goes deeper than we can fathom with the line of our understanding, we may feel authorized to parry it after the adroit manner once exhibited by Dr. Cheyne, quoted by our author. This celebrated physician, being asked to explain how it happened that the measles never afflicted the same person twice, replied to his interrogator,—"tell me why they have it *at all*, and I will then tell you why they have it only once."

But we must curtail our observations upon the various topics embraced in the treatise before us, lest we transcend the limits assigned to this department of the Journal. We, therefore, pass over without particular notice, the experiments of Dr. Sonderland, of Bremen, in transmitting variola through brutes; tried elsewhere with contradictory results. Upon the important topic of spurious forms of vaccination, and the various causes interfering with its efficacy, we shall merely stop to observe that the proposition advanced by Dr. Howison, vaccinator of the Royal Dispensary, Edinburgh, "that the perfection and scarcity of the vaccine vesicle will be in proportion to the freshness of the vaccine virus," is refuted by our author, who by a series of experiments, demonstrated, to his own satisfaction, at least, that when matter, obtained at the same time from the same source, was inserted weekly upon new subjects, so long as it preserved its efficacy, the progress, symptoms, cicatrix, insusceptibility to re-vaccination and to variolous inoculation, are in all respects similar in the last and first cases. That the "security" is diminished by the age of the matter, he, therefore, disbelieves in toto, for the above and other reasons which he assigns. The chance of its taking effect is diminished by keeping; but whenever the matter does take, the protection afforded is as great with the old as with the new matter. This conclusion, we believe, accords with the observation of all our most intelligent physicians.

It has become a very popular opinion, fostered indeed, by some high professional authorities, that the protecting power of vaccination is diminished or destroyed by age, and the system becomes again liable to receive the small pox. The limit of protection has indeed been fixed variously at seven, ten, and twenty-one years. The evidence of some of the best writers, would seem to prove the reverse of all this—namely, that the greater the lapse of time, the greater the security; a position which, however, may be as incorrect as the former. Our author's testimony upon the subject, is contained in the following extract.

"A constant endeavour for a number of years to collect facts in relation to this point, has as yet produced no evidence in my mind of any change from the lapse of time. I have seen repeatedly, the modified form of small pox occurring in individuals, who were only just through a decided vaccine disease; and in others when twenty, twenty-five, and thirty years have elapsed; which proportion of cases, recent or long standing, has obtained to the greatest extent, I can hardly say. Thus I can state, generally, from personal experience, that I see no reason

for believing that any alteration of the vaccine prophylaxis occurs, either from time or the changes of puberty."

At the present day, the greatest number of persons attacked with varioloid, are certainly the vaccinated, for the simple reason, that they constitute much the largest portion of the population.

Among the various notions prevalent in relation to this subject, it has been stated, that the degree of immunity afforded by the vaccine disease, is enhanced by subjecting the system repeatedly to vaccination: and thus, as the advocates of the practice have expressed it, effecting a complete saturation with the vaccine influence.

"This belief," our author tells us, "seems based on certain experiments, in which, after ordinary vaccination, the operation was soon repeated; a tubercle arose, which was deemed the result of lesser susceptibility to the vaccine disease; the process was renewed a third, fourth, or even fifth time, occasioning a less and less inflammatory action, till no other effect was produced than would arise from the mere puncture."

"Were the result of this test uniform, it would go far to render this opinion probable; but experience has demonstrated to me, that a second vaccination frequently produces no soreness, whilst in individuals of a different habit of constitutional health, or cutaneous susceptibility to morbid impressions, this false vaccination will occur as many times as the arm is punctured with a lancet, touched with the vaccine, or any impure secretion."

Whilst sufficient facts are wanting in favour of the reputed effects of what is termed *saturation* of the system, to produce a more perfect exemption from varioloid, evidences of the insufficiency of such a practice exist, of which the occurrences on board of one of our public vessels, the North Carolina, offer a striking example. In a cruize made by this ship up the Mediterranean, she shipped at Norfolk a crew of 900 men, most of whom had been vaccinated, or had had the small pox; but were, nevertheless, twice vaccinated prior to the ship's sailing; a third time at Gibraltar; and a fourth time at Port Mahon. Dr. Henderson, who reports these facts, states that, notwithstanding this *ultra* re-vaccination, under such various circumstances of virus, climate, &c., 157 of the crew had the varioloid.

We have thus endeavoured to furnish a brief sketch of the essay of Dr. Bell, which may be read with profit, by all practitioners. For, although it treats of subjects of rather a trite character, yet are his conclusions, in general, so just, as to assist and confirm many who have been wavering in opinion upon certain points connected with the more obscure and undecided doctrines relating to vaccination, varioloid, and small pox. G. E.

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ART. XIX. *Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the nineteenth.* London, 1835, 8vo, pp. 416.

The nineteenth volume of Medico-Chirurgical Transactions, whether considered in reference to the number and variety of the papers contained in it, or the intrinsic value of each, demands a much more extended notice than unfortunately either our time or space will permit us to give to it. We know of no work of a similar character which presents a larger amount of valuable facts and practical observations in almost all the departments of the healing art, than the several volumes of these trans-

actions; the present being in no degree inferior to either of the preceding. It comprises nineteen papers, all of them upon subjects of very great importance, and from the pens of gentlemen whose professional reputations are well established both at home and abroad.

The first paper comprises the history of nine cases of Fracture of the Neck of the Femur with the appearances observed after death, by John Howship, Esq. These cases, we are informed, are not presented as demonstrating the full extent of the constitutional powers occasionally manifested in the production of ossific union, but as suggesting certain remarks illustrative of that process, which may probably form the subject of some future communication.

The second paper is by Cæsar Hawkins, Esq. and gives the detail of seven cases of Warty Tumour in Cicatrices, with remarks.

The tumour which Mr. H. denominates the warty tumour of cicatrices, makes its appearance, he remarks, "in some old scar, many years after the injury which has produced it has been healed, whether a burn, a cut, or a laceration of the skin."

"It arises equally from a flogging or a scald, in which the skin alone has been injured, or from a cut or gun-shot wound, which injures also the tendons or bones below the skin, and makes a more complicated cicatrix. There appears, in the first place, a little wart or warty tumour in the cicatrix, which is dry and covered with a thin cuticle, but which soon becomes moist and partially ulcerated, like the warts of mucous membranes, from which a thin and offensive semi-purulent fluid is secreted. In this stage it gives no pain nor uneasiness."

"In the second stage the growth of the tumour becomes more rapid, the warty appearance being in some measure lost, a more solid substance projecting from the diseased skin, which bears much resemblance to the fungus of hæmatodes; the formation of fresh warts being still seen around the tumour, and preceding the change which has been alluded to. The tumour is very vascular, and bleeds when touched, but its irregular surface still allows the probe to pass through its structure, except where it is most firm."

Even when of large size, the warty tumour is essentially a disease of the skin.

"The cutis around the tumour which has not yet become prominent in the form of warts, is thickened and fibrous, and divided by furrows, having very much the appearance of the skin from which the hoof of the horse grows, and to which it is attached. The section of the central tumours is firm and smooth, but, if carefully examined, may still be found to consist of fibres rising perpendicularly from the base of the tumour, where it is attached to the fascia; all trace of the original texture of the skin being here lost, though it may be gradually traced into the unchanged part of the cutis of the cicatrix around the tumour."

Mr. H. observes, that, while he wishes to assert the origin of the warty tumour from the texture of the skin, he is perfectly aware that a disease of some bone may be *added* to the alteration of the skin, as is shown in two of the cases related by him.

The tumour, we are told, may be easily and safely removed from any part of the body.

"In the leg, indeed, the removal of the whole limb must generally be preferable, where the tumour is at all extensive; but if its size admits of excision, there need be no fear of the disease being re-formed in any texture except the skin. Still, however, if there be any doubt, whether the bone below may have become carious, or otherwise diseased, from the proximity of the tumour, a portion of it may be taken away without adding to the length of confinement." "There can be no doubt that the removal by the knife is far more effectual than any attempts to destroy it by caustics, since the whole thickness of the skin requires to be re-

moved, and the action of caustics is too uncertain to lead to any reliance upon them. Experience shows the same thing with regard to the much smaller tumours producing phagedenic ulcers of the face in elderly persons, which, though sometimes destroyed by the use of caustic, are often irritated and made to spread with increased rapidity, where the caustic has been insufficient entirely to destroy them."

"After the tumour has become solid and prominent, a new action takes place in it, and the tumour ulcerates and sloughs alternately, with a great deal of pain and suffering, and if is destroyed down to its basis, so as to present the appearance of a foul excavated ulcer, except in its circumference, where the skin is raised, thickened, and everted, and from time to time warts are generated, which again ulcerate and slough, till the patient becomes gradually worn out by suffering, but without at all the sallow and peculiar aspect of a person dying of a malignant disease; and, on examination of the body, no disease of the absorbent glands is found, nor is there, as far as I know, any sign of malignant disease in the interior of the body."

The next paper is the Description of an interesting case of Abdominal Tumour, with the appearances on dissection, by John Howship, Esq. Independently of other traces of extensive disease, the most striking feature in this case was the existence of a large tumour, occupying more than half the abdominal cavity, principally upon the left side. The tumour appeared to be seated on and attached to the lumbar vertebræ. It was encysted, and measured, from above downwards, as it lay in the abdomen, eight inches; its circumference, subsequent to removal, being nineteen inches. It was moderately vascular and contained several cysts, communicating with each other; it was filled partly with a thick purulent matter, but principally with a grumous bloody fluid. Its external parietes were strong and compact and about one-eighth of an inch in thickness. The most curious circumstance, is, that this encysted tumour was in fact one of the lumbar absorbent glands enormously enlarged. "That it was so," remarks Mr. H. "is proved, not only by the particular situation in which it was found, but also by the detection of several other glands of the same cluster in an earlier stage of a similar disease, two of which, removed with the mass, still remain attached to the large tumour."

The history of a case of Pulmonary Phlebitis, by Robert Lee, M. D., possesses great interest, from the extreme rarity of the disease; it is the only instance of it, which has fallen under the notice of Dr. Lee.

The succeeding article is entitled Observations on Ulceration of the Cartilages of Joints and on Anchylosis, by Herbert Mayo, F. R. S. The principal object of the present paper—

"Is not to multiply proofs of vital forces being inherent in cartilages, but to establish certain pathological differences which the author believes to have been overlooked by others, in ulcerative diseases of joints. With this purpose, he has described several cases and dissections which have fallen under his observation. These tend to show that articular cartilages are liable to three distinct forms of ulceration, or exhibit three varieties of ulcerative disease, which, although they may be occasionally combined, are oftener met with separately.

"The cases first described, are instances of rapid absorption of cartilage, beginning on its synovial aspect, the new surface, if of cartilage, being smooth and unaltered in structure; if of bone, healthy; the absorption of cartilage being attended with inflammation of the capsular synovial membrane.

"The second series exemplify chronic ulceration of cartilage, beginning on its synovial aspect, producing an irregularly excavated surface, with fibrous or branch-like projection of the cartilage and synovial membrane, attended with inflammation of the capsular synovial membrane, and sometimes of the same membrane

where it is reflected over the cartilage; the bone and surface of cartilage towards it being healthy.

"The third are instances of ulceration of cartilage, beginning on the surface towards the bone, attended with inflammation of the adjacent surface of the bone, with inflammation of the synovial membrane, and, in some instances, with sensible vascularity of the cartilage itself."

We regret that our limits will not permit us to present an abstract of the very interesting cases detailed under each of these three classes.

The next paper is a Case of Sudden Illness in Advanced Pregnancy, terminating in the delivery of twins and death, with an account of a singular laceration of the peritoneal coat of the uterus, as detected on the post-mortem examination. By W. H. Partridge, Esq.

"Mrs. B., the mother of six children, was seized about 11 o'clock, A. M., on the 25th of August; being then in the beginning of the eighth month of utero-gestation, with abdominal pain, and vomiting of bilious matter. After the lapse of two hours, a watery discharge, mingled with coagulated blood, took place from the vagina. Mr. P. saw her at three, P. M., when she appeared pale, faint, and sunk in countenance, like a person suffering from extreme hæmorrhage, though the quantity of blood she had then lost was inconsiderable. As he was apprehensive labour would be the consequence of such continued vomiting, he gave her a dose of opium and enjoined her strictly to keep the recumbent posture. The sickness continuing, about 5 o'clock one of her attendants gave her some brandy, which allayed it, but shortly after labour pains commenced, and, about seven, Dr. P. was sent for in haste, and, on his arrival, found the patient just delivered of twins, each child enveloped in its proper membranes, with the placenta attached. The contents of the uterus were expelled by a violent contraction, which left her much exhausted; and during the application of the bandage, the abdomen heaved violently, the impulse forcing the epigastric region remarkably forward. The pain continued very severe, and Mr. P. gave her another dose of opium, but without any alleviation of the pain, which increased in intensity till she expired, at a quarter before nine. Rather more discharge than usual had followed the delivery, though less than many women lose with impunity."

"On opening the abdomen, (on the following day,) a quantity of thin dark-coloured blood was found, which amounted to about forty ounces. There were no coagula. The uterus was well contracted, and, on its anterior part, quite natural, excepting an ecchymosed appearance of the cellular texture around the tubes and ovaries, but on the posterior surface a considerable number of transverse lacerations were discovered, all more or less curved in form, with the convex part towards the fundus, averaging from half an inch to two inches in length, and varying in depth; some were mere fissures, as though made by a penknife. One was particularly large, measuring three inches in length, and nearly two in breadth in its centre. A flap of detached peritoneum had fallen down, and the raw and fibrous structure from which it had been torn, was exposed as completely as it could have been done by the most careful dissection. The immediate cause of death was probably exhaustion from internal hæmorrhage and intense pain."

The seventh article is on the Chemical Constitution of Calcareous Tumours of the Uterus, and other parts. By John Bostock, M. D.

The results of the analyses detailed in this paper, confirm the opinion that had been previously entertained respecting the chemical composition of these bodies; that they are, for the most part, composed of phosphate of lime and animal matter, generally united to a small quantity of carbonate.

The following paper, by Dr. Robert Lee, is on Fibro-calcareous Tumours and Polypi of the Uterus.

"The most important diseases of the human uterus," remarks Dr. L., "accompanied with sensible alteration of structure, may be divided into three classes.

"1. Those which are produced by inflammation of one or more of the textures which enter into the composition of the uterus.

"2. Those which arise from the formation of tumours in the parietes of the

organ, or from enlargement of the glands situated in its orifice, which have no tendency to degenerate into a malignant form, and do not contaminate the surrounding structures.

"3. Those which result from a specific and malignant action of the uterus, by which its different textures and the adjacent viscera become disorganized."

The phenomena and treatment of the diseases comprehended in the first of these classes, Dr. L. has described in the fifteenth and sixteenth volumes of the Medico-Chirurgical Transactions; in the present paper he treats on the pathology of fibro-calcareous tumours and polypi, these being "the most important organic affections included in the second class of diseases of the uterus."

This paper does not readily admit of such an analysis as will comport with our limits.

The ninth article is entitled, Further Remarks on the ulcerative Process, by C. Asten Key, Surgeon to Guy's Hospital.

Close observation of the process of ulceration, under its varied modifications, has led Mr. K. to regard it, in its strict signification, not as an absorbent action, "but as a process of degeneration, or a softening of tissue, analogous to that action by which the medullary part of the brain and scrofulous tubercles become converted into a purulent mass."

Pus in an abscess, he contends, to be at first the product of a softening process, and afterwards a secretion from the vessels of the walls of the cyst.

"Ulceration is a process analogous to the softening attending suppuration; it is a degeneration of tissue, a change in the affinities existing between its component parts, by which it becomes changed from a solid organized texture to a fluid inorganic mass. It differs from gangrene in being a vital action; while gangrene, by at once producing death in a part, prevents any such change taking place."

This is an interesting paper; its length, however, prevents us from attempting an analysis of it.

Some remarks on Malformation of the Internal Ear, being the result of post-mortem investigations performed in five cases of congenital deafness by Mr. Edward Cock, communicated by Dr. Bright, is the subject of the next article.

"The subjects examined were all children who died of strumous diseases of the thoracic and abdominal viscera. In three instances, one or both ears were the seat of scrofulous ulceration, affecting the tympanum and meatus externus, with partial destruction of the membrana tympani. In one case, the cavity of the tympanum, together with the mastoid cells, was completely filled with the thick cheesy deposit of scrofula, whilst a similar affection pervaded the whole cancellated structure of the petrous bone. The connexions of the osicula auditus were destroyed, but the bones themselves remained entire. I merely mention these facts, as indicating the strumous habit of body, which I believe," says the author, "prevails very generally among the deaf and dumb; for, as these affections could have existed but for a short time previous to death, they can hardly be supposed to have had any connexion with the congenital defect in the organ of hearing."

"In all the cases examined, the petrous portions of the temporal bones exhibited more than the usual varieties of size and shape. In some the bone was so deficient in particular spots as barely to cover the internal cavities, whilst in others there appeared a preternatural osseous developement. In one instance, the petrous bone of a child twelve years old, exceeded in size, hardness, and compactness of structure that of any adult which I have witnessed.

The malformation which was discovered in two instances, consisted in a

partial deficiency of two of the semi-circular canals. The extremities of these tubes opening into the vestibule were perfect, but the central portions were impervious, or rather did not exist at all. In the first case, only one ear was examined, but in the second case both. On the right side, the middle portions of the oblique and vertical canals were wanting; on the left side they presented a similar imperfection. The scala tympani likewise was terminated, at its larger extremity, by a bony septum, which separated it from the tympanum, and occupied the situation of the membrane of the fenestra rotunda. With the exception of these malformations and the scrofulous affection of the tympanum, no deviation from the healthy state could be discovered in either of the five subjects examined. The eustachian tubes were pervious; the bones, muscles, and membranes, entire and natural; the labyrinths were filled with their transparent fluid. In no instance did the auditory nerve present any peculiarity, although carefully traced from its origin to its distribution. The chorda tympani was present in every instance, but Mr. C. cannot vouch for the integrity of "all the little nervous fibrillæ, which pass into the tympanum and ramify on its walls, requiring the aid of a microscope for their dissection.

In another case, which was dissected by Mr. Dalrymple, the aqueduct of the vestibule was so large as to admit the passage of a small probe, whereas, in the natural state, a fine hair can with difficulty be introduced into the canal.

The ensuing paper is on the same subject, being the examination of the organs of hearing, from the body of a boy, aged 13 years, who had been the subject of congenital deafness. By J. Thurnam, Esq. In this case, the horizontal semicircular canal was imperfect on the right side, in about the outer third of its extent; no trace of sacculus or utriculus vestibuli or of membranous semicircular canals was discovered. On the left side, the osseous semicircular canals were complete, but no utricle or sacculus was met with; there were, however, very minute, gelatiniform, membranous, semicircular canals.

The thirteenth paper is the relation of some Cases of Mental Derangement, successfully treated by the acetate of morphia, by Dr. E. J. Seymour.

The morphia "appears to have been of more use in what is termed melancholia, where the mind is tormented by imaginary want, ruin, or crime, than where the derangement partakes of more brilliant ideas, as of superhuman knowledge, dexterity, or wisdom; or in those cases in which one single idea occupies and absorbs the mental powers."

Cases and Observations illustrative of Diagnosis where Adhesions have taken place in the Peritoneum, with remarks upon some other morbid changes of that membrane, by Richard Bright, M. D., constitute the subject of the fourteenth paper. The character and length of this interesting and valuable article, oblige us to pass it over without attempting an analysis.

The next paper is by Dr. John Elliotson, on the Medicinal Properties of Creosote. Dr. E. commenced his trials of the remedial effects of this remedy, by administering it in cases of phthisis and epilepsy.

"The medicine proved stimulating; and, if the first dose exceeded two or three drops, nausea, vomiting, vertigo, head-ache, and heat of the head, were generally the consequence: although, if the dose was at first only one or two drops, many patients bore a gradual increase of it to six, and some to ten, twenty, or even

more, without unpleasant effect. As is observed with all powerful remedies, a very minute dose only can be borne by some persons."

Dr. E. found it much more liable to disagree with the stomach, when not well diluted, though the longer it is given the less dilution frequently is necessary.

"At first every drop usually requires about half an ounce of water, and few persons can take many drops in much less than half a pint, without experiencing, at least, considerable heat, in the tongue especially, and in the pharynx, œsophagus, and stomach." Dr. E. has "always suspended it in the water by first mixing it with a little mucilage."

The trials made with the creosote in phthisis were perfectly unsuccessful. Dr. E. is satisfied that it is not a remedy for tubercles.

"Where, however, only a single ulcer, or but a small number exist in the lungs, and there is no disposition to farther tubercular formation, it is very beneficial. One young gentleman, with a large solitary cavity in his left lung, has completely recovered, and not the slightest morbid condition is discoverable by the ear. In bronchorrhœa, or that state of the bronchial mucous membrane which consists in a profuse secretion without inflammation, Dr. E. has seen the inhalation of creosote of essential service." "In asthma, also, dependent upon morbid excitability of the bronchial membrane, its inhalation is often useful. Even where it agrees perfectly well, the inhalation frequently induces a heat of the tip of the tongue."

With respect to the trials made with creosote in epilepsy, a few patients, for a time, had milder fits, and at longer intervals. But, except in one or two instances, the disease returned with its former severity, or was uninfluenced altogether; occasionally it appeared to be rather aggravated. The tranquillizing effect of creosote in some instances, encouraged Dr. E. to exhibit it in neuralgia, hysteria, and that general morbid excitability which is sometimes denominated extreme nervousness. In the first cases of neuralgia in which it was tried, it appears to have been perfectly successful. But, like all the other remedies employed in this disease, it will, remarks Dr. E., frequently fail, "for neuralgia, like epilepsy and paralysis, depends upon many causes, and these must require various modes of treatment, and be in their nature sometimes uncontrollable. In rheumatic neuralgia, not inflammatory, I imagine it is, that creosote is the most successful. In that morbid tenderness of the surface of the body which appears so nearly allied to neuralgia, and which so often occurs in females, I have not seen it of any use."

"In common hysteria, unconnected with inflammatory condition of any part, I have often seen it considerably lessen the disease; the more rare and strange forms of hysteria have yielded to it; and the morbid excitability of those who are called nervous persons, I have frequently seen abated by it in a remarkable manner. In the latter description of persons, however, it is better to begin with no more than half a drop, as occasionally more at first produces excitement of the head. Palpitation, depending upon mere morbid excitability of the heart, has yielded to it far more than to other remedies."

Dr. E. considers, that, from his experience, the extraordinary power of creosote in arresting vomiting, when independent of inflammation or structural disease of the stomach, is perfectly established. He knows of no remedy to be compared with it in arresting vomiting. He has repeatedly seen it succeed after the failure of prussic acid. The dose for this purpose and the frequency of repetition will differ in different cases. More than two drops he has seen sometimes aggravate the sickness, and sometimes he has begun with three drops every three hours, and been obliged even to give more. One or two drops may be given every hour or half hour, till

the vomiting ceases, and, if a dose is rejected, it should be repeated immediately. The first dose frequently succeeds. He has tried it successfully in numerous cases of Cholera.

"In colic and enteritis, it arrests the vomiting long before the bowels are opened, and purgatives are thus retained, which were all rejected previous to its exhibition. Even in a case of severe vomiting, apparently from arsenic, which usually excites inflammation of the stomach, Dr. E. has known it succeed astonishingly, as well as in the only case of vomiting from pregnancy in which he has had an opportunity of trying it: and in sea-sickness, in which, however, his experience of its power is yet limited. Of course, as it subdues vomiting, its power is equally great over nausea."

Although Dr. E. has sometimes seen mere gastrodynia unrelieved by creosote, and has found that symptom to be more certainly subdued by prussic acid, yet "numerous cases of general derangement of the stomach, liability to nausea or vomiting, acidity, pain, &c. often yield to it in a most remarkable manner." When the chief or almost only symptom has been flatulence, Dr. E. has occasionally found the creosote to produce no relief or even augment the symptom. When gastrodynia or flatulence has been united with other symptoms of derangement of the stomach, Dr. E. has combined prussic acid and creosote with great benefit. When, indeed, either fails in dyspepsia, he would advise their union.

Dr. E. has tried the creosote in diabetes, apparently with good effects. Of its external application he speaks favourably.

"When an ulcerated surface has required a stimulus, or when a slough, or unhealthy, perhaps offensive, discharge existed, he, like others, has seen it of great utility. As it prevents or arrests putrefaction, and removes all taint in dead matter, we cannot be surprised at its removing the offensive nature of discharges, whether from mucous membranes or ulcers, and preventing the injurious effects of diseased animal matter upon the part with which it is in contact. When the contents of the intestines have been very offensive, Dr. E. has impregnated clysters with it advantageously; and has employed it as a wash in mercurial fœtor as well as ulceration, and in fœtor of various parts of the system. He has seen foul ulcers become clean, and ulcers of long standing have sometimes healed rapidly on its application. Its agency in vomica and bronchorrhœa is clearly the same as in its external application. In two cases of pruritis podicis it lessened the distress considerably, after every thing else had failed. Here it was applied pure, as in cases of tooth-ache, which it often at once removes. But usually from half a drop to two or three, diffused in mucilage in an ounce of water, is sufficient, though its application must be very frequent. It appears to have been sometimes useful in porrigo, employed pure or variously diluted."

The sixteenth paper is on the Functions of the Fœtal Kidney, by Dr. Robert Lee. The facts adduced by Dr. Lee, seem to him to demonstrate that "the kidneys of the human fœtus, like the liver, intestinal canal, and thymus gland, are in a state of activity, and perform each their respective functions prior to birth." Of this we conceive there can be very little doubt.

To this paper succeed Observations on Fractures of the Bones of the Pelvis, by Henry Earle, F.R.S.; a highly important article, presenting the history of five cases of fracture implicating the bones of the pelvis, and concluding with the following remarks.

"It will no doubt be observed, that in the narrative of these several cases I have stated that the catheter was introduced, or attempted to be so, in each case. I take this opportunity of strongly urging the propriety of a cautious examination of the urethra in every case of suspected fracture of the pelvis: next to extensive internal bleeding, the most alarming and certainly fatal occurrence is effusion of urine. The former it may not be in our power to control or obviate, but the latter we may often prevent, and, by timely assistance, save the patient. Whenever it is clearly ascertained that the urethra is ruptured, and the catheter cannot be

passed into the bladder, it will be right at once to make a free incision in the perineum, and thus allow of a free exit for the urine. It fortunately happens in many cases that the effused blood compresses the urethra and prevents the escape of the urine, and thus time is allowed for taking the necessary steps, but these should on no account be delayed. In many doubtful cases of fracture of the pelvis, an examination with the finger per anum will enable the surgeon to detect the nature and extent of the injury."

On Serous Effusion from the Membranes and into the Ventricles of the Brain, and its connexion with apoplexy and other diseases of the brain, by John Sims, M. D., constitutes the subject of the eighteenth paper.

"It is a very prevalent opinion," remarks Dr. Sims, "that if a person, rather advanced in life, fall down in a fit and suddenly expire, or survive but a short time with coma, insensibility, stertorous breathing, &c., that if the head of such person be examined, and effusion to any extent be found between the membranes or in the ventricles, without any extravasation of blood, that death has been occasioned by what is termed serous apoplexy. This opinion, which is considered a satisfactory one, is often given to the surviving friends of a patient, and by the medical witnesses examined in cases of inquest before the coroner and other judicial tribunals. I think the following cases and observations will tend to show that this opinion is very frequently erroneous, and that they will, on the other hand, lead to the conclusion, that persons dying suddenly or speedily under these circumstances, are more likely to have suffered an attack of simple sanguineous apoplexy, or that form of disease in which a loaded state of the blood vessels is discovered on dissection. Of course I exclude from consideration all other causes of death in persons who may have suffered a sudden and fatal seizure."

The facts and observations adduced by Dr. S. are arranged under the following heads:

1. Serous effusion in the brain, or its membranes, of persons dying of various diseases not cerebral, and who had manifested no symptoms referable to the brain.

2. Serous effusion into the ventricles or membranes, to a considerable extent, in cases where old apoplectic cysts were found, with or without attendant paralysis: the patient being destroyed by diseases not cerebral.

3. Serous effusion into the ventricles or membranes of unquestionably long standing, with old apoplectic cysts: the patients being destroyed by recent extravasation of blood within the cranium.

4. Cases of simple sanguineous apoplexy.

5. Cases of serous effusion into the membranes or ventricles of old standing, with loaded, dilated, or diseased blood vessels, frequently denominated serous apoplexy, but more properly referable to simple sanguineous apoplexy.

The next paper, on Hypertrophy and Atrophy of the Brain, is by the same gentleman.

After presenting a very short summary of the opinions of a few authors who have written on the subject, Dr. Sims relates the history of several cases of hypertrophy which have fallen under his observation—he then attempts to ascertain the average weight of the brain of persons of all ages, from a very large number of cases in which the brain has been weighed. Short notices follow of a number of brains which exceeded the average weight, from various causes, but which scarcely come under the description of hypertrophy. The histories of several cases of atrophy of the brain, both general and partial, are next related, and, in conclusion, such inferences are drawn as the facts and observations detailed in the paper appear to warrant. This is a highly interesting article, but our limits will only permit us to insert the general conclusions of the author.

"1. It appears that pathological writers have hitherto had a very imperfect knowledge of the phenomena connected with hypertrophy of the brain.

"2. Cases of hypertrophy of the brain are met with where no change of texture can be discovered, and the enormous size of these brains arises from the mere addition of similar particles.

"3. Cases of hypertrophy occur, in which, added to the increased size of the brain, there is a change in the texture of the brain, which has been described as resembling boiled albumen, ground-rice pudding, cream cheese, &c.; a flattening of the convolutions; little or no blood or serous fluid in the vessels, cavities, or membranes of the brain. This state of the brain is of a more acute character, and is probably produced more or less rapidly by any causes that excite the brain or its blood vessels, or that increase general or partial nutrition.

"4. Hypertrophy is allied to or connected with apoplectic seizures, either as a precursor, a concomitant, or a cause; in this state of the brain simple sanguineous apoplexy may be more readily induced, or life may be destroyed by a very small clot of extravasated blood."

Dr. S. has no doubt that in the dissection of apoplectic brains, many cases of hypertrophy have been entirely overlooked, and the brain has been reported as normal. "Now believing," he adds, "that I am correct on this point, I take the liberty of impressing on the minds of medical practitioners the further investigation of this subject, in consequence of its obvious bearing on the practical treatment of apoplexy and other diseases of the brain."

"5. Extensive disorganization of the head and lungs may impede the return of blood from the brain, or so obstruct its circulation as probably to occasion hypertrophy, or enlargement of the brain.

"6. It is probable that in cases of sudden death, which, on dissection, have been attributed to a flaccid state of the heart, angina pectoris, spasm of the heart, &c., hypertrophy of the brain, causing simple sanguineous apoplexy, though unnoticed, may have been the sole cause of death.

"7. In the brains that are hypertrophied, both children and adults are sometimes destroyed by active inflammation of the brain, terminating in ramollissement; and also this affection is frequently connected with the more slow form of ramollissement in adults, whether arising from inflammation or not.

"8. In some children who, from the size of the head, are suspected to be suffering under hydrocephalus internus, or the disease terminating in the deposition of fluid in the ventricles, it is highly probable that the brain is in a state of hypertrophy.

"9. The brain is sometimes affected partially by hypertrophy, either of one hemisphere, one lobe, or of the corpora striata or thalami.

"10. Hypertrophy is confined to the cerebrum; the cerebellum is not so affected.

"11. From a series of observations, it appears that the average weight of the brain goes on increasing from 1 year old to 20; between 20 and 30 there is a slight decrease in the average; afterwards it increases, and arrives at the maximum between 40 and 50; after 50, to old age, the brain gradually decreases in weight.

"12. The brain is sometimes unusually large, not amounting to hypertrophy, in persons dying of various diseases, especially in extensive pneumonia, and other diseases of the lungs and heart, and in these cases the brain is generally very much loaded with blood.

"13. The brain in the advanced periods of life, and in some diseases, is diminished in volume, or atrophied, either generally or partially, and there are certain marks observed in dissection by which this state of the brain may be known. It is also probable that there are symptoms occurring during life indicating atrophy of the brain.

"14. In phthisis pulmonalis, diseases of the stomach, and other emaciating disorders, the brain also sometimes undergoes a process of wasting.

"15. In cases of atrophy of the brain, the place previously occupied by cerebral substance is supplied by serous fluid, or by deposition of bone; and this deposit of bone frequently takes place on the inner surface of the cranium, sometimes in the diploë.

"16. The cerebellum is subject to atrophy as well as the cerebrum."

The nineteenth and last paper in the volume is likewise by the same au-

thor. It is on the cure of "ramollissement" of the brain. The following are the inferences which Dr. Sims draws from the facts and observations contained in the body of his essay.

"1. In some of the cases the account of symptoms is necessarily very limited, but this circumstance I do not consider of much importance, as I am desirous of placing the subject on its true basis—the anatomy of the brain: in other cases, however, we have a sufficiently copious detail of symptoms which indicated the nature of the disease, and the progressive improvement in some of the paralytic symptoms correspond with the traces of the cure or arrest of ramollissement observed in the brain.

"2. The traces of the cure of ramollissement of the gray matter are, absorption of one or more layers of this substance on the convolution, and adhesion of the pia mater to the parts, holes in the gray matter of the corpora striata and other central parts, together with atrophy and flattening. When transudation from the blood vessels, or extravasation, has taken place, constituting real ramollissement in the gray matter, a permanent fawn colour of the atrophied convolutions, and of the small holes in the other parts, is observed. The slightest form of this softening of the gray matter is noticed in the case of puerpera hæmorrhagica; in others we have one or more layers removed, or the entire gray matter, leaving the white matter of the hemisphere visible. We sometimes see merely small holes in the corpora striata; at others, cavities of various sizes and forms, with a marked wasting of these bodies.

"3. The traces of the cure of ramollissement in the white matter are, the numerous clean or scooped out holes containing a limpid fluid, some of which are observed to be lined by a fine transparent membrane, others appear as if worm-eaten. These holes are of various sizes and forms, from minute points to the magnitude of a bean: the porous cheese or new bread appearance; the hardened state of the white matter generally in these brains, and particularly in the parts contiguous to the holes; the granular state of the white matter indicating cicatrices; the hardened state of the corpus collosum, fornix, &c. found in the brains of children and young persons, with fluid in the ventricles, probably the consequence of previous inflammatory ramollissement at an earlier period of life. Where there is observed the fawn coloured deposit in these holes of the white matter, they are traces of red ramollissement of the white matter, or probably, in some instances, of what has been sometimes termed capillary apoplexy.

"4. I have perhaps to assume in this argument that ramollissement is *by some means or other stopped in its progress;* and, if this be granted, the preceding detail of the morbid appearances will readily fill up the several steps of the process of cure: the absorption of the softened parts; the adhesion of the pia mater to the surfaces; the secretion of fluid into the holes; the granular state of the white matter, probably from cicatrization; the hardening of the white matter, probably from effusion of lymph; and the fawn coloured traces of previous transudation and extravasation. And I think this assumption ought to be granted, from the improvement in the symptoms of some of the patients, corresponding with the state of the brain after death; and because it is consistent with all analogy in the powers by which nature arrests or cures disorganization in other parts of the body.

"5. There are some points connected with the subject, as the spherical spots of coagulated blood, the extravasated layer on the arachnoid, the fawn coloured traces of extravasation between the arachnoid and the dura mater, and the connexion of the traces of previous ramollissement with apoplectic clots: these are subjects well worthy of attention, but I have sufficiently adverted to them in the remarks on the respective cases in which they occurred.

"6. The preceding facts and observations are, I believe, sufficient to attest the cure of ramollissement of the brain, and to set the question at rest on the solid basis of pathological anatomy."

We have now finished a hasty sketch of the contents of the volume before us. There is no one of the papers which are embraced in it that will not afford important information to almost every member of the medical profession, by whom they have not already been attentively studied.

D. F. C.

ART. XX. "*Manual do Fazendeiro, ou Tratado Domestico sobre as Enfermidades dos Negros, por J. B. A. Imbert, Doutor em Medicina da Facultade de Montpellier, Membro Honorario da Sociedade Real de Medicina de Marseille, Membro Correspondente da do Rio de Janeiro, Antigo Cirurgião Ajudante Maior das Armadas Navaes Francezas.* 8vo. pp. 341. Rio de Janeiro, 1834."

"*Farmer's Manuel, or Domestic Treatise on the diseases of Negroes.* By J. B. A. IMBERT, Doctor in Medicine, of the Faculty of Montpellier," &c. &c.

When we remember that a very large proportion of the population of Brazil is composed of negroes, either slaves or freemen; that they are scattered over an immense territory, on large plantations, remote from towns, and far from medical aid; that slaves have become of more value since the close of the trade, and importation of them in 1830, we may agree with the author in the necessity of placing in the hands of the "Fazendeiro," or planter, the means of recognising and treating the diseases to which the negroes are obnoxious, and rescue the poor beings from the errors of charlatanism, and the panacea called *Leroy*, a violent emetico-cathartic, which has been in vogue for a dozen years throughout Brazil. The manner in which Dr. Imbert has performed his task, is very creditable to him as a sensible practitioner, and a close observer. The work was originally written in French, and translated from the manuscript, as Dr. Imbert informs us by his friend, Doctor Josè Maria Frederico de Souza Pinto, a native practitioner, already favourably known by his works, in the literary world of Brazil. The language is excellent; the descriptions are graphic and very much to the purpose.

The population of Brazil, estimated from the number of houses, (supposing each to contain five free people,) as furnished by the returns of the election of Deputies to the National Legislature in 1833, amounts to 3,130,000 freemen, a large proportion of whom is black; and the slaves, equal to two-fifths of the whole, 2,086,666, making an aggregate population of 5,216,666 souls. But there is no estimate of the population which the free negroes, mulattoes and Indians bear to the whites.

Some idea may be formed of the activity of the slave trade in Brazil, prior to 1830, from the fact that the importation of slaves from Africa into Rio de Janeiro and Bahia, amounted to 52,773, in 1828; 52,823 in 1829; and 38,365, in the first half year of 1830. Of this number, one-third was usually lost by disease, brought on by cruel treatment, bad diet, change of climate, &c. Brazilian masters are represented as humane and kind to their slaves, who are comparatively well situated after escaping from the hands of the kidnappers and their numerous agents. Notwithstanding that the trade was closed by law in 1830, the number of slaves since smuggled into Brazil, is estimated to be from seven to ten thousand.

The introduction of ten pages, in which Dr. Imbert enumerates the several causes of diseases to which negroes are exposed, thus concludes: "From what we have said, it is easy to conceive that men cannot preserve their health, who are unrestrained by any social ties of the land; badly fed, badly clothed, exposed to all the vicissitudes of the atmosphere; subjected to labour almost continuously, and but too much inclined to indulge in gross pleasures, and in the use of strong liquors. Indeed they do not resist long; diseases attack them, and a treatment almost always ill devised, puts an

end to their days. Hence comes this alarming depopulation, and, above all, the disproportion observed betwixt the numbers of young and old; the number of the latter is infinitely small compared with the former—let any one say, after examination, whether this is not a fact. To what shall we attribute this difference, if not to those causes which we have suggested? How many reflexions may they not inspire in the minds of legislators, moralists and philosophers!"

The sale of slaves amongst individuals forms a very considerable branch of trade in Brazil; therefore, the first chapter of the work before us is taken up with the consideration of rules, by which to detect predisposition to disease, to select slaves in the market. Those from the Gold Coast are esteemed to be the best. The usual conformation of a well proportioned body, broad, full chest, free respiration, hair not too much crisped, legs free from ulcers, and indications of elephantiasis, which is a terrible scourge to the slave population, are the points chiefly insisted upon.

The second and third chapters treat of hygiene, and of the treatment of disease generally, with a short account of the several temperaments. The lymphatic is the most common amongst the white population.

The fourth chapter contains a brief description of the functions of digestion, and of the symptoms and treatment of dysentery, which is a much more unmanageable disease within the tropics, than we are accustomed to meet with in the United States. The features of this disease are too well known to require a description here. "In the first stage of the disease, when the pains of the abdomen, the dryness and heat of skin, the frequent and acrid dejections announce the highest degree of irritation or inflammation of the intestines, then," says our author, "I prescribe bleeding, locally, from the abdomen or anus, either by cups or leeches. I administer at the same time, barley water, marsh-mallow or flax-seed tea, &c., with syrup of gum arabic. All drink should be taken cold; a most rigorous diet is to be observed, and even gruels, (mingãos) and broths particularly, are to be inhibited. The abdomen should be covered with a cataplasm of linseed, or with cloths wrung out of hot flax-seed tea, and frequently renewed. Enemata of the same, but in one-half or one-fourth the usual quantity, are to be resorted to. That the cutaneous transpiration may be established, the patient should be properly lodged, his bed should be in a dry and elevated situation, and frictions to the limbs with baize, should be used.

Emetics of Ipecacuanha, two or three times repeated, have been much praised in the commencement of dysentery; but our author thinks they should be resorted to with caution.

"In the second stage, when the fever has diminished, and the pains of the bowels have abated, and the evacuations have become less frequent and liquid, it is proper to recur to other remedies. Then some farinaceous gruel may be allowed; from five to ten drops of laudanum should be added to each enema, which should be repeated four or five times daily. Then we pass to the use of rhubarb in the dose, of three grains with one of ipecacuanha. This should be administered in mixture, powder or bolus, from three to six times in the twenty-four hours; and it usually produces good effects."

"In the third stage, when the fever has disappeared without the evacuations having become natural, the treatment must be modified to meet the circumstances of the case. The diet should be less rigid; broths free from fat may be given. The enemata are to be continued; substituting for the flax-seed, however, an ounce of gum arabic, dissolved in eight or ten ounces of water, or a decoction of bran, with an increase of fifteen drops of laudanum. The number of these ene-

mata should not exceed two or three a day. If dull pain, without fever remain, or if the patient be unable to sleep at night, he may take in the afternoon, a half grain of opium, which may be increased to a grain."

So soon as the pain has entirely disappeared, the number of the evacuations reduced to three or four in twenty-four hours, and the dejections have gained some consistence, the disease may be looked on as drawing near its close. The patient may then take some light aliment, such as soup, rice, eggs, fish, sweet-meats, and a little water slightly coloured with wine, for drink. In this manner the patient is to return gradually to his usual diet.

"At the termination of the disease, warm baths by contributing to restore the functions of the skin, are very useful, and never prejudicial."

"During convalescence, the patient should be properly clothed, avoiding cold and humidity, and the powerful rays of the sun."

"But the disease does not always run a course so regular—the symptoms are aggravated; and the disease becomes chronic."

"When the patient is threatened with dissolution by the immoderate quantity of the evacuations; his forces exhausted; when the tongue becomes dry and black, the head and organs appear to be engorged, practitioners resort successively to camphorated quinine, decoction of the root of columbo, camphor in doses of two grains with four of nitre, administered four or five times in twenty-four hours, camphorated enemata; above all, the grand resource is in flying blisters on different parts of the limbs, and in desperate cases, on the lower part of the abdomen."

In chronic dysentery, Dr. Imbert recommends the use of a plant, known to botanists under the title of "*Bigogna obliqua.*"

Such is the plan of treating dysentery pointed out by our author, and which, after an experience of six years, I am disposed to prefer to all others. General bleeding is rarely useful; on the contrary, it is very often fatal, by exhausting the forces, and inducing the chronic form, which I look upon as incurable on board ship, between the tropics. Change of climate, removal on shore, with carefully selected prophylactic measures, hold out the only chance of recovery.

In spite of the high authority of Dr. James Johnson, I am not disposed to resort on all occasions to the lancet, or to the use of mercury, in hot climates; as a rule heroic remedies will not be followed by beneficial effects. I remarked several years ago, in the No. of this Journal for August, 1830, (p. 348,) that seamen within the tropics do not bear the loss of blood to the same extent as in higher latitudes; they are left free from disease, but so enfeebled that they require many months before they are sufficiently recruited to return to their duties.

The fifth chapter treats of Elephantiasis, or "Elephancia," a disease which was formerly seen in every street of Rio; at present it is not so commonly met with, but it is not the less frequent; the patients are better cared for, and kept out of sight. Dr. Imbert extracts the description of the disease from the first vol. of the "Transactions of the Royal Asiatic Society, Lond. 1826," given therein by Dr. Ainslie. Our author recommends mercury in several forms, both internally and externally, but says nothing of the success of his practice.

Chapter VI. treats of Tetanus, which occurs, both in negroes and whites, but in the proportion of ten of the former, to one of the latter. And death from *trismus nascentium*, is in about the same proportion.

"Tetanus is a disease most common in hot countries, and in them, it attacks negroes in preference to whites, and particularly young slaves.

"Tetanus is of two kinds; Essential and Traumatic.

"The primary, or immediate cause of essential tetanus, consists in a rapid transition from heat to humid cold, in great atmospheric variations, and in the suppression of the cutaneous transpiration, determined by these variations.

"Extreme sensibility of the nervous system, and irritation produced by any kind of wound, lesion, or surgical operation, constitute efficient causes of accidental, or traumatic tetanus.

"The immediate causes of tetanus, or locked jaw in infants, are the same as of essential tetanus; and it is sometimes produced by teething and the presence of worms in the intestines.

"Of all the means of preventing tetanus, the first is to avoid constantly, exposure to sudden atmospheric changes, and to take every precaution against suppression of perspiration; as regards babes, they should be guarded against all accidents to which, from the fragile state of their organs, they are much exposed.

"Finally, the remedies held most in repute in the cure of this terrible disease, consist in the co-ordinate and consecutive use of leeches, emetics, purgatives, opium, camphor, musk, tepid baths, narcotic plasters, and oily embrocations."

Such is the recapitulation of this chapter given by the author.

Chapter VII. treats of Intermittent Fever. Dr. Imbert considers the disease to consist of a certain state of the nervous system, which, however, he does not attempt to explain.

"Intermittent fever is proper to all regions, but occurs more frequently in hot climates, and it is particularly common in those where extreme heat is accompanied by humidity. Hence, in the capitol of Brazil, where these two qualities exist in a high degree, intermittent fevers are in a manner endemic. Physicians in Rio de Janeiro, rarely fail to remark, that every disease wears the intermittent type, owing to locality. This is a fact which cannot be denied, and we should pause to examine it, that we may ascertain the probable cause of it.

"Rio de Janeiro is an important city, which embraces within its precincts a very considerable population, composed of blacks and whites. Built upon the shore, it extends to a certain distance in every direction. Most of the streets are neat, and some of them are even tasteful. [In this we do not agree with the author—to our eye they are far from clean.] Few houses are more than two stories high, and many of them are of one only; the foundations are not sufficiently deep; the walls are thin, made partly of bricks, and (particularly) sand from the sea, which attracts and keeps up moisture; consequently these houses are constructed in opposition to the rules of hygeine. Though they have a great many windows to facilitate ventilation, they are nevertheless unhealthy; this very circumstance gives rise to currents of air, and consequently suppression of perspiration, which is termed in the country *constipacão*, or cold. The sea which seems to embrace this city in its arms, communicates and increases the moistness of the air. In fact, Rio de Janeiro is nearly surrounded by the sea, by the bays of Praya do Flamengo, Bota-fogo, São Christovão and Mata-porcos, whose salt waters lave the posterior part of Cidade Nova—New Town. Besides, Rio de Janeiro is at greater or less distances, inclosed by colossal mountains, in form of a half circle. These mountains from the base to the summit, are covered with a thick and majestic vegetation. While they afford an agreeable sight to the eye, they form and accumulate around themselves, dense black clouds, which afterwards discharge themselves impetuously over the city, particularly at the end of spring and autumn. These are the causes to which we may attribute the intermittent element, which is more or less present in all diseases.

"But, the existence of numerous pools, which are seen in the suburbs of the city, and even in the middle of some of the streets, are an active cause, and incontestibly the most powerful one, for the frequent presence of intermittent fevers in Rio de Janeiro. The stagnant waters of these pools, not only keep up the humidity in their neighbourhood, but render the atmosphere more unhealthy in consequence of noxious exhalations from the surface, or from mud retained at the bottom."

After preliminary evacuations, Dr. Imbert prescribes the Sulphate of Quinine, in doses of from 8 to 12 grains for adults, and from 2 to 6 grains

for children, according to their age. The dose is not always the same. If 8 or 12 grains be prescribed, the first dose should be one half, that is, 4 or or 6 grains; the second, of one or two grains, and so diminishing, leaving an interval of half an hour between the doses, the last one preceding the expected paroxysm one or two hours. Complete apyrexia must have taken place before the medicine be given.

Chapters 8th and 9th, treat of Scurvy and Worms; chapter 10th, of Venereal diseases, which he treats on the mercurial plan, and 11th, Gonorrhœa.

"Gonorrhœa is a local affection. In the commencement, when there is inflammation, pain and swelling, the patient should take freely of lemonade, or infusion of mallows, with twenty or thirty grains of the nitras potassæ, dissolved in each bottle; leeches should be applied to the perineum, and the scrotum should be enveloped in a flax-seed poultice. To these means should be added rest, light diet, local and emollient bathing and mild enemata; a well adapted suspensory bandage should be worn. After the inflammation has subsided in a degree, the diet may be less rigorous, but the bathing and drink should be still persevered in. At this time, injections of infus. sem. lini., or of the root of marsh-mallows, should be used two or three times daily. When the intensity of the inflammation has subsided, to each eight ounces of injection should be added an ounce of Catalonia wine;—the quantity of wine to be daily increased, and that of the infusion proportionally decreased, until the injection comes to be of pure wine—and if necessary, brandy may be then added.

"It is hardly necessary to say, that during the treatment the patient should abstain from *coffee*, stimulating drinks, &c.

"When it becomes gleet, bals. copaib. in doses of fifteen drops, night and morning, which may be increased to fifty or sixty drops. This plan, in our hands, has never failed to effect a cure, in from twenty to thirty days."

Chapters 12th and 13th, treat of Scrofula and Venereal Ophthalmia; Chapter 14th, of Obstruction of the Testicles; 15th, of Carbuncle; 16th, of Ascites, and 17th, of Hydrocele, or "Dropsy of the Scrotum," which is very common.

"The great numbers, both of blacks and whites, affected with this disease in Brazil, leads one to suppose at first sight, that it is endemic. Yet such is not the fact, for hydrocele is a disease of all countries, with the difference of being more frequent in Brazil, where it is more favoured by some cause, than in other places. This cause seems to us to be recognised in the heat and moisture which operate equally upon all; negroes suffer more from their want of cleanliness, their mode of life, and particularly their filthy habits."

This disease is met with every where in the streets of Rio de Janeiro—in some cases the scrotum extends to the knees, and I am informed by a friend, that in former years, it was by no means uncommon to see men carrying their scrotal tumors, before them in wheel-barrows.

Chapter 18th, treats of the Yaws, and 19th of Varix, to which negroes are peculiarly obnoxious. Chapters 20 and 21, treat of Hydrophobia and Gastritis.

Chapter 22nd, treats of Hepatitis, which is more common between the tropics than elsewhere, and it is more frequent amongst negroes than whites.

"The treatment of acute hepatitis is based upon almost certain principles. Leeches and cups locally applied are to be preferred to general bleeding. Leeches are to be applied to the anus, if the patient suffer from painful hæmorrhoids. Hot fomentations to the abdomen, cool drinks, &c. are to be freely employed.

"English physicians place great reliance on the use of calomel in this disease, and almost always prescribe it soon after the invasion of hepatitis. No doubt but the results justify the preference they give to this medicine, or it would have

been long since abandoned. Perhaps they may know some superior manner of preparing it. Be that as it may, we confess, in good faith, that we do not partake of their enthusiasm in respect to calomel, and we dare not prescribe it, except at the close of the disease, and then, rather as an alterant than a purgative, because it appears to us, that it ought to produce nervous tremors, irritating the nervous papillæ spread over the mucous membrane of the intestines, and develope the inflammatory spots. We feel inclined to recommend the bland laxatives in preference."

Dr. Imbert recommends calomel in the treatment of chronic hepatitis, but he feels disposed to use rhubarb in preference. He prescribes it in cold infusion. Two or three drachms of the root, coarsely powdered, are infused in a cup of cold water over night, and, after straining, is taken by the patient in the morning. This is repeated several times, with an interval of one or two days.

Chapter 25th treats of Tussis Convulsiva; 26th, of Rheumatism; 27th, of Sciatica; 28th, of Colics; 29th of diseases of the skin; 30th, of poisoning, which, it seems, is frequently practised by slaves on their masters; 31st, of Asphyxia; 32nd, of Surgical diseases, and 33d, of diseases of women. Under the section, treating of parturition, it is stated, that the negresses cut the umbilical cord very long, and dress it with pepper, and foment it with Ol. Ricini, or other irritating substance, and then bind it so tight against the abdomen, as to cause inflammation, called in Brazil, "Mal de sete dias,"—seven-day evil—which costs the lives of a great number of infants. Dr. I——, farther tells us, that in order to preserve their comely looks, the negresses are in the habit of resorting to means of procuring abortion, under the impression, that pregnancy and its consequences are fatal to their attractions, for the other sex.

The fourth section of this chapter is occupied with the consideration of Leucorrhœa.

"To judge from the great number of maids and married women in Brazil, and chiefly in the large cities, who suffer from 'flores brancas'—white flowers—we naturally inquire whether there is any special cause, inherent in the locality or dependent on the mode of living, which produces and maintains this annoyance which so much afflicts those ladies who are attacked by it? There appears to be no difficulty in the solution of this question; let us see whether we cannot solve it in a satisfactory manner.

"Cast your eyes around and examine, particularly in cities, the women who surround you, and you will be arrested to admire their splendid air, the gracefulness of their motions, the lightness of their step, the regularity of their features, the whiteness of their skin, the beauty of their hair, and the delicacy of their cincture. But, at the same time, you will remark, that the want of those rosy colours which animate and enhance the expression of the countenance, deprives them of perfection of face. This fact, observation has canonized, and which we must attribute on one side, to the circumstance, that, from their organization, women have, as we have observed before, a more decided tendency to the lymphatic temperament than men; and on the other, to the fact that the influence of a hot and humid climate augments still more this organic tendency; now, if the lymphatic temperament causes, as in fact, it does, softness of the flesh, paleness of the skin, and weakness of the muscles, we may then trace the effects to the cause, and consequently admit that Brazilian ladies cannot enjoy those fine colours which usually animate Europeans. The beauty of the former and of the latter has nothing in common as respects the rosy colours of the face; they must always differ, one from the other. European ladies are remarkable for the fine lively colours which beautify their face, for the brilliance and fire of their eyes, for the vivacity of their movements, for the boldness of their character, for their pretty and jovial frivolity, and for their interesting affectation. What distinguishes Brazilian

ladies, is a milder expression of countenance, a more delicate complexion, eyes, in which there is a lazy voluptuousness, which do not, however, inspire lasting love at a single glance; timid looks, which make one guess the sentiments which stir the heart, yet without declaring them; finally, a certain languid tendency to quietude, which is not destitute of charms, but, on the contrary, is often a powerful means of attraction.

"The influence which the climate of South America exercises over the complexion of females is so positive, (not that all conform to it), that it acts not only upon those born here, but also upon foreigners, after they have resided some time in Brazil. In fact, observe those European ladies when they land, in whose face you behold the soft harmony between the rose and lily, who, from being few in the empire, become more charming; if you should see them in a year or two afterwards you will be astonished at the change which the climate has effected in them. Entirely, or in part, these colours have disappeared. What remains of these beauties, is the remembrance, accompanied by a longing for those they possessed and lost, and also by a hope of one day recuperating them in their own country.

"Yet, the influence of climate is not the only cause operating on the temperament of the females of Brazil, giving them that constitution which disposes them by degrees to leucorrhœa. Other causes, not less important, contribute to this end, and we must avail ourselves of them, to establish conclusions which explain the frequency of this disease.

"In the first place, let us ask the question—is it not true, that females live very retired in Brazil, and take very little exercise, either in consequence of the heat which, constantly prevailing, obliges them to avoid motion, or in consequence of ancient and inveterate prejudice, (that will only disappear with time), which inhibits them from appearing frequently in public, and thereby deprives them of salutary exercise? Admit our proposition, and we have every reason to expect it, it necessarily follows, that this sedentary life, this life of quietude and indolence, which exercises so baneful an influence upon the mind and heart, augments the natural debility of the body, renders digestion languid, and deprives the female of the beneficial action of the solar rays, as well as of the respiration of the open air, which is not less important.

"For the inhabitants of Brazil, tea is an article of prime necessity, and we believe they excessively abuse the use of it. In fact, not a day passes but they take five or six cups of this infusion, and increasing in strength, with a view of making it more sapid—'But tea is now with us a social necessity'—is not this what you say to me, fair Brazilians? But, permit me to reply, that this relaxing beverage is seriously injurious to your health; and, since it is those who are most afflicted with leucorrhœa, that take it to its excessive use, you may probably attribute the origin and persistence of this disease.

"Without stopping for other considerations, drawn from the usages and customs of the country, which, were it necessary, would serve to corroborate the opinion we have just expressed relative to this complaint, we declare it to be an established fact, that 'Flores Brancas,' or Leucorrhœa, is a very common disease in Brazil."

Chapter 34th treats, in several sections, of the most common diseases of children; the 35th, of external remedies, as leeching, cupping, blistering, &c.; the 36th, is a medical formulary, and the work concludes with the 37th chapter, which contains some judicious remarks upon the preservation of slaves, and the conducting of large plantations in the country.

W. S. R.

ART. XVI. *An Inquiry into the Nature of Sleep and Death, with a view to ascertain the more immediate causes of death, and the better regulation of the means of obviating them.* Republished by permission of the president and council of the Royal Society, from the Philosophical Transactions for 1827, 29, 31, 33, and 34: being the concluding part of the author's experimental inquiry into the laws of the vital functions. By A. P. W. Philip, M. D., F. R. S., L. & E. 8vo, pp. 254. London, 1834.

This is almost wholly a republication of seven of the author's papers, published originally in the Transactions of the Royal Society of London; only two of which, the last, have an immediate reference to the chief subjects of the title. The *first* is "on the functions of the nervous system, and the relation which they bear to the other vital functions;" the *second* consists of "some observations on the effects of dividing the nerves of the lungs, and subjecting them to the influence of voltaic electricity;" the *third* is devoted to "Some observations relating to the function of digestion:" the *fourth* is "on the sources and nature of the powers of circulation:" and the *fifth* "on the relation which subsists between the nervous and muscular systems in the more perfect animals, and the nature of the influence by which it is maintained." On the subjects of all these papers the views of Dr. Philip have been long known. They could not fail, indeed, to be impressed upon the memory, from the variety of shapes in which they have been presented to the reader; their clearness is, however, by no means enhanced by the repeated references which he makes to other of his contributions to science.

From a review of all the facts contained in his paper on sleep, the author arrives at the following conclusions:—

"1. That in the brain and spinal marrows alone reside the active parts of the nervous system.

"2. That the law of excitement in the parts of these organs, which are associated with the nerves of sensation and voluntary motion, is uniform excitement followed by proportional exhaustion, which, when it takes place to such a degree as to suspend their usual functions, constitutes sleep; all degrees of exhaustion which do not extend beyond them and the parts associated with them, being consistent with health.

"3. That the law of excitement in those parts of the brain and spinal marrow which are associated with the vital nerves is also uniform excitement, but which is only, when excessive, followed by any degree of exhaustion, no degree of which is consistent with health.

"4. That the vital, in no degree partaking of the exhaustion of the sensitive system in sleep, only appears to do so from the influence of the latter on the function of respiration, the only vital function in which these systems co-operate; in consequence of which its organs, without being in any degree debilitated, are less readily excited.

"5. That the law of excitement of the muscular fibre, with which both the vital and sensitive parts of the brain and spinal marrow are associated, is interrupted excitement, which, like the excitement of the vital parts of these organs, is only, when expressive, followed by any degree of exhaustion; and

"6. That the nature of the muscular fibre is every where the same, the apparent differences in the nature of the muscles of voluntary and involuntary motion depending on the differences of their functions, of their relation to the brain and spinal marrow, and of the circumstances in which they are placed." p. 150.

The peculiarities of dreaming, Dr. Philip ascribes to the partial operation of the causes of disturbance, and some of the sensitive parts of the brain being capable of excitement without disturbing the others: "and thus

it is that the more near we are to awaking, the more rational our dreams become, all parts of the brain beginning to partake of the excitement; which has given rise to the adage, that morning dreams are true."

In a preceding paragraph he observes, that when we awake we are conversing, and are thus obliged to employ words, the usual incongruities of dreaming do not occur. The ideas are sufficiently detailed to enable us to correct the suggestions of the imagination. "No man," he says, "ever dreamt that he was telling another that he had been flying through the air:" —in which the author is assuredly in error. It has happened to us to do this very thing, that no man ever did do; and every inveterate dreamer could give instances in opposition to the conclusions of Dr. Philip.

In his last paper, Dr. Philip divides the forms of death into five classes. In the first, he places the only *natural death*, that from old age, where all the powers of life, in consequence of the operation of the agents, which excite their organs, gradually decline, and death is only the last sleep, characterized by no peculiarity, in which these powers, partly from their own decay, and partly from the lessened sensibility increasing the difficulty of restoring the sensitive system, become incapable of this office, in consequence of which the individual awakes no more.

*Secondly.* The death which he considers to resemble most nearly that from old age is that from excessive exhaustion of the sensitive system, "from the operation of stimulants of greater power than this system can bear, notwithstanding the intervals of such imperfect repose as their continued operation admit of, without the supervention of disease; which, not being capable of relief from the continued action of the vital parts of the brain and spinal marrow, by sympathy spreads to them, the affection of each system increasing that of the other, till all the powers of the sensitive system are destroyed."

*Thirdly.* The death, in which disease of the sensitive system arises, not from causes over exciting, but directly debilitating it, the debility which they induce being of the same nature with that from excessive excitement, and running the same course as in the second stage of the preceding form.

*Fourthly.* The death which arises from the privation of the natural stimulants of the organs of life: and

*Fifthly.* That which arises from diseased states of those organs, analogous to the states produced in the organs of the sensitive system by the causes which make their impression on them. p. 226.

"If," says the author, "the foregoing include all the modes of decay, the physiological nature of death, in its various forms, is referable to very simple principles. In the natural decay, the excitability of the organs of both the sensitive and vital systems is gradually impaired by stimulants, which, whether existing within our bodies, or making their impression from without, belong to inanimate nature: for it is by the impression of such stimulants alone that the functions of life are maintained. In the different kinds of violent death, with the exception of the death which arises from a failure of the natural stimulants of the vital organs, which is comparatively rare, and extremely simple in its nature, we find the excitability of one or both of these systems, or some parts of one or both of them, capable of influencing all the others, more quickly destroyed by the continued operation of causes which either stimulate beyond the limits of health, or applied beyond the limits of their stimulant operation, destroy the powers of life, either by directly destroying the powers of the sensitive system, or depriving it of those powers by which it is maintained. All these causes, it is evident, tend to the same effect; the extinction of the sensibility, which constitutes death ac-

cording to the common acceptation of the term, the immediate cause of which, therefore, exists in the sensitive parts of the brain and spinal marrow." p. 228.

In another passage, Dr. Philip remarks, that the last feelings, in natural death, are necessarily of the same nature as those that precede sleep. It is only when the course of our decay is disturbed, that suffering of any kind attends it. It appears to us, however, that, physiologically speaking, the difference between sleep and death is sufficiently appreciable. During sleep a process of renovation is going on in the organs of animal life, which adapts them for subsequent activity, and contrasts signally with the annihilation of the functions that constitute death; hence the marked difference between healthy sleep, and the state of coma or stupor induced by a morbid cause, from which the patient is aroused languid and exhausted, instead of active and recruited. The idea of the intense suffering immediately preceding dissolution is, and has been, so general, that the term "Agony" has been applied to it in many languages. In its origin, the word means nothing more than a violent contest or strife, but it has been extended so as to embrace the pangs of death and any violent pain. The agony of death, however, physiologically speaking, instead of being a state of mental and corporeal turmoil and anguish, is one of insensibility. The hurried and laboured breathing, the peculiar sound on inspiration, and the turned up eye-ball, instead of being evidences of suffering, are now admitted to be signs of the brain having lost all, or almost all, sensibility to impressions. Whilst the brain is possessed of consciousness, the eye is directed as the will commands, by the appropriate voluntary muscles of the organ; but as soon as consciousness is lost, and the will no longer acts, the eye-ball is drawn up involuntarily under the upper eye-lid. All the indications, then, of mortal strife are such in appearance only: even the convulsive agitations, occasionally perceived, are of the nature of the epileptic spasms, which we know to be produced in total insensibility, and to afford no real evidence of corporeal suffering. An easy death—euthanasia—is what all desire; and, fortunately, whatever may have been the previous pangs, the closing scene in most ailments, is generally of this character. In the beautiful mythology of the ancients, Death was the daughter of Night, and the sister of Sleep. She was the only divinity to whom no sacrifice was made, because it was felt that no human interference could arrest her arm: yet her approach was contemplated without any physical apprehension. The representation of Death, as a skeleton covered merely with skin, on the monument at Cannæ, was not the common allegorical picture of the period. It was generally depicted on tombs as a friendly genius, holding a wreath in his hand, with an inverted torch;—as a sleeping child, winged, with an inverted torch resting on his wreath; or as Love, with a melancholy air, his legs crossed, leaning on an inverted torch,—the inverted torch being a beautiful emblem of the gradual self-extinguishment of the vital flame.

The disgusting representations of Death from the contents of the charnel-house were not common until the austerity of the 14th century, and are beginning to be abandoned. In more recent times, Death seems to have been portrayed as a beautiful youth; and it is under this form that he is represented by Canova, on the monument which George the IV. of England erected in St. Peter's at Rome, in honour of the Stuarts. R. D.

ART. XXI. *Philosophie de l'Histoire Naturelle ou Phénomènes de l'Organisation des Animaux et des Végétaux.* Par J. J. VIREY, Docteur en Médecine de la Faculté de Paris, et Membre titulaire de l'Académie Royale de Médecine, &c. &c. In nova fert animus.—OVID. Paris, 1835. 8vo, pp. 512.

*Philosophy of Natural History, or Phenomena of the Organization of Animals and Vegetables.* By J. J. VIREY, Doctor of Medicine of the Faculty of Paris, &c. &c.

The author of the "Philosophy" has been long known as one of the most prolific writers of the times. An active and useful member of the *Société de Pharmacie* of Paris—busily engaged, too, in the exercise of his calling, he has yet found time and inclination to discuss voluminously, and at the same time, most fancifully, many interesting and intricate points of anthropology. Early in his career of authorship, he selected moral rather than physical man for the object of his investigations; but, of late, his inclinations appear to have led him more to the cultivation of the natural sciences. Seven and twenty years ago, he published a treatise in two volumes "On the Art of improving Man;"—in 1817, "Medico-philosophical Researches on the Nature and Faculties of Man," in one volume;—in 1820, a "Natural History of Medicines, Aliments, and Poisons," in one volume;—in 1822, a "History of the Manners and Instinct of Animals," in three volumes;—in 1823, a volume "on the Vital Power;"—in 1824, his "Natural History of Mankind," in three volumes;—in 1825, a second edition of his work on "Woman," in one volume;—in 1830, the second edition of his "Philosophical Hygiéné;"—in 1833, the third edition of "Treatise on Pharmacy," in two volumes;—and, last y, the work before us. Besides these separate publications, the pages of the "*Nouveau Dictionnaire d'Histoire Naturelle*," of the "*Dictionnaire des Sciences Medicales*," and of many of the periodicals of the day, contain numerous evidences of the author's industry and zeal in the cultivation of his profession. Every thing that emanates from him indicates research, and almost all exhibit vivid, we might perhaps say, boundless imagination. The predominance, indeed, of the latter quality detracts largely from the value of most of his productions, and has acquired him the character, with some, of being the most fanciful of anthropological speculators.

The work before us is divided into four books; the first of which is entitled "General Physiology, or Principles of Organization, animal and vegetable:"—the second is on "the origin and formation of beings as regards their destruction;"—the third, on the "developements of organic forms and their functions;"—and the fourth on the "reproduction of beings, animal and vegetable."

In respect to the theory of the formation of living bodies, M. Virey is a decided *univocalist*. All philosophers are so, as regards the beings highest up in the scale; but many distinguished naturalists, amongst whom may be mentioned De Lamarck, Raspail, Treviranus, Burdach, Gruithuisen, and Wrisberg, conceive it probable that spontaneous or equivocal generation may occur in the lowest divisions of living bodies.

M. Virey, however, considers, that facts, gradually developed in the wonderful progress of the natural and anatomical sciences, are sufficient to annihilate "the monstrous hypothesis of the spontaneous life of matter, and the pretended formation of organized beings, by blind inorganic substances." p. 30.

His views on the difference between organized and inorganic bodies are singularly fantastic, and often by no means intelligible. Witness the following extract:

"Different progressive degrees of animation may be observed in organic substances. First a simple gelatinous liquid offers the first framework of all organization. Subsequently, an albuminous substance, susceptible of concretion, passes successively to the form of the more or less solid tissues. The fibre constitutes the more or less hard wood of vegetables, or the muscular flesh of animals. Lastly, the nervous pulp contains, during life, the most striking excitative faculties of the whole economy.

"These four principal elements, *gelatine, albumen, fibrine, and nervine,* enjoy properties more or less active, as contractility, which is the attribute (*apanage*) of the muscular fibre, and sensibility, with which the medulla of the nervous cords is endowed. The substance, composing the muscular fibre, and the neurilemma, (the membrane enveloping the nervous element,) are more soluble in acids than in alkalies. The nervine or pulp of the nerves is soluble in alkalies, and not in acids. The contained is thus found in a state opposite to that of the containing. The latter is the anelectric (*cohibant*) of the former: their reciprocal polarity is therefore contrary or inverse."

"Moreover, there is a great analogy in composition between the nervine and the seminal matter of animals. Both hold phosphorus in combination, a very energetic agent of stimulation on the other living parts, a principle eminently combustible, or the most opposed to the burnt (*carburé*) and heveral state." p. 43.

In its general character the work before us is liable to all the objections that apply to M. Virey's works in general. Perhaps, indeed, there is a greater admixture of obscure psychology, or what he would doubtless term "philosophy," in the present than in his preceding publications. Of this we have a signal example in what he calls his "Terminal Propositions," which conclude the text of the work, and embody, as it were, his leading principles of organization.

"1. Is the DIVINITY the *intellectual principle,* the *vital force* of the world, (in the universal encephalon,*) analogous to the nervous fluid, or to the celestial Ether?"

"2. Is NATURE like the general nervous apparatus, distributing to all parts of the spheres movement and life, for the organization and developement of animal and vegetable beings?"

"3. Are the MASSES, called INORGANIC and ANORGANIC, materials constituting the different bodies which compose the worlds, either in the permanent mineral and chemical condition, or in the transitory condition of organization, through the influence of the vivifying principle?"

"4. Do ORGANIZED BEINGS, in their individual and transitory existence, emanate as temporary productions from the great tree of life?"

"5. Is each of its different BRANCHES or STOCKS of SPECIES attached to a common trunk by paternal connexions, in their genera and families, according to the general law of life, reproduction, and destruction?"

"6. Do all ANIMATED SPECIES (without excepting the human race, terminal or regulating (*terminale ou regulatrice,*) on our planet) undergo, like *their individuals,* the law of developement, increase, vigour, and multiplication, and afterwards of old age and death, to accomplish the orbit of transformations or modifications in accordance with those of the star that nourishes, and causes them to expand and fructify?"

"7. Do not all the organized beings of our world aspire by successive developement, and by a more and more complicated evolution, to rise progressively towards the pinnacle of perfection, in order to approach the organism of man? The vegetable, which is at first the most imperfect, tends to attain a higher rank from its birth and to its complete developement, as man from the primitive embryonic point (infusory animalcule?) runs through all the steps of the zoonomic

* "Sensorium universale, of Isaac Newton and of Samuel Clarke.

scale.* That which happens to each individual, from conception to complete developement, takes place in the species constituting the parallel threads of the vegetable and animal kingdom."

"8. Are the *human race*, and the other *animal and vegetable species*, subordinated in their reciprocal harmonies, or dependent (*pondérées*) upon each other, according to their forms and instincts of life, whilst *minerals* are subjected to mechanical and chemical law? The latter can only obey physical necessities. The more other bodies enjoy of spontaneity in their mobility and sensibility, the farther extends the circle of their attributions. Lastly, the human race deploys over the inferior beings, and over its own race, providential acts of the creative power, of which it becomes the minister over this globe."

"9. Circumscribed within the limits of his organization, *civilized* MAN can only act with a liberty restricted within the sphere of his destinies, although one less restricted than that of the instincts of other animals. He pursues the course prescribed by the supreme Arbiter, without being able to overstep it—any more than every other creature, according to his constitution and intellectual rank in the general order of the universe?" R. D.

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ART. XXII. *A further inquiry concerning Constitutional Irritation, and the Pathology of the Nervous System.* By BENJAMIN TRAVERS, F. R. S. Senior Surgeon to St. Thomas's Hospital, &c. &c. &c. London, 1835. 8vo, pp. 444.

It will be remembered, that in the year 1826, Mr. Travers published a work upon constitutional irritation. The present essay is a continuation of the same subject. The former treatise has been so long before the profession, that students of the general pathology of external diseases, are, or should be familiar with its merits. The name and reputation of Mr. Travers will secure, for any of the labours of his pen, an attentive perusal, for the pathology of several injuries and local diseases, have been very successfully illustrated by him on former occasions. But we must be permitted to state, that theorizing upon an extended scale, or the philosophical analyzation of complex and multiform questions does not appear to be the fort of this author. In the treatise before us, he objects almost in the commencement against the attempt to define with accuracy, such general terms as are used to designate the several temperaments, diatheses, &c.; things that Mr. Travers thinks that all can comprehend or recognise at sight, but which cannot be described. Now, these are precisely the classes of terms that most require definition, in all philosophical treatises—because they express the broadest, and therefore the most vague generalizations. Temperaments run into each other, and scarce ever exist in simplicity in any individual, and therefore, by Mr. Travers's rule, it is in vain to define them. Yet he does not object to the employment of the terms which designate the different temperaments! A distinguished French naturalist once declared that there existed no such things as species, yet he has described the types and representatives of numerous groups of individuals, under the title of species, to the infinite advantage of natural science. Nor is there any thing inconsistent in this procedure. There is an unbroken sheet of water between this place and London, and it is a great way to London!—but the extent of meaning attached by different persons to the phrase "a great way," and if we

* *Monstrosities* are *infra-formations*, but irregular, either totally or partially, and so of imperfections.

wish to convey to others an idea of the distance mentioned, surely we shall find some utility in the metaphysical abstraction, which introduced the division of the sphere, by degrees of latitude and longitude. An abstraction rendering possible a clear definition of distance. If the student of geography have no accurate notion of the whole surface of a country, how can he comprehend the position of its several parts?

We perceive in many portions of this work, the ill effects of this neglect of definition; but without descending into particulars, it may be noticed, that though the treatise dwells expressly upon "constitutional irritation," we have been unable to arrive at any very certain conclusion as to the precise meaning attached by the author to the word constitutional.

When it is added, that the style is by no means clear, that many of the cases are far from being drawn up with sufficient detail, and that some of the important phrases are such as we are unable, fully to comprehend, the disagreeable portion of our task is ended, and we feel great pleasure in recommending the work to the students of surgical pathology, for many useful hints and cases. The second part, which treats of the pathology of the nervous system, is perhaps the most valuable portion of the essay.

R. C.

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ART. XXIII. *Practical Observations on Diseases of the Heart, Lungs, Stomach, Liver, &c., occasioned by Spinal Irritation; and on the Nervous System in general, as a source of organic disease. Illustrated by Cases.* By JOHN MARSHALL, M. D. London, 1835, 8vo, pp. 172.

The subject of the present work is one of uncommon interest, the lesions, namely, of the nervous system, more especially of its ganglionic portion, and the morbid phenomena thence resulting. This branch of pathology has not certainly received from the medical profession that degree of attention which it demands, and hence every new accession of well authenticated facts in relation to it, is of importance, by leading us to a better acquaintance with the true character of various abnormal conditions of the animal functions, and enabling us the more readily and certainly to direct our remedial measures for their prevention and removal.

That many of those groups of symptoms which seem to indicate a very considerable deviation from the normal condition of the heart, lungs, stomach and other viscera, are produced solely by an irritation of some portion of the nervous system, independent of any apparent disease of the organ, the derangement in the functions of which gives rise to the leading morbid phenomena, is rendered evident by the fact, that when, by our remedies, we are enabled to remove the nervous irritation, all the symptoms of organic disease promptly disappear.

The true pathology of this class of affections has, until within a very late period, been in a great measure overlooked, and its investigation still presents a field well adapted to repay the labours of the industrious investigator. The only danger we apprehend, is, that when the attention of medical men shall be more generally directed to the morbid phenomena under consideration, they will forget, as is too often the case when a new source of diseased action is first pointed out, that nervous irritation consti-

tutes only one and not the sole cause of deranged or morbid actions; and that, in too many instances, remedies will be directed entirely to a part of the body unaffected with disease, instead of to the organ which is actually its seat.

The work of Dr. Marshall, although it has but slight claims to elegance or even correctness of style, and notwithstanding the pathological views it has been written to establish, are not always very clearly expressed, nor even, in many particulars, perfectly intelligible, is nevertheless valuable in consequence of the numerous facts and practical observations which it contains.

The proposition which the author assumes as the foundation of all his reasoning, is—

"That many diseases which we have been in the habit of calling idiopathic, meaning, by this term, that they originate and have their causes in the organ where they are developed, may not only be *simulated* by nervous irritation or debility, but that that nervous irritation or debility, continued, will, of itself, cause structural disease and disorganization at the extremities of the nerves so affected."

"What I more particularly contend for," he remarks, "is this—that irritation or debility, consequent upon irritation of the nerves, at their origin or ganglionic junctions, will, in time, and occasionally in a very short time, produce actual disease of the organs dependent upon these nerves for vital energy. Whereas, this disease might have been completely prevented, or a speedy cure effected, by active treatment timeously applied to the seat of morbid action. And I hold that this is more particularly the case with the nerves which ramify upon the vascular system and larger viscera."

Dr. Marshall presents in detail the history of two cases of aneurism of the aorta, eight of disease of the heart, six of phthisis, two of asthma, three of diseased liver, four of dyspepsia, one of cramp in the stomach, one of diabetes, five of tabes mesenterica, three of chorea, and six of anomalous disease, all of which he conceives to have been produced and kept up by nervous or spinal irritation.

"It has been," he contends, "too much the fashion to consider the vascular system as the *arcanum vitæ*, and the nervous system as a subordinate agent in the human economy. A blind adherence to this theory has cramped and misled some of our most celebrated practitioners. As far as my own observation and investigations lead, I am decidedly inclined to attribute the superiority of agency and importance to the nervous system.

"I scarcely see how it can be denied that the vascular is the subordinate, since to the nervous alone it is indebted for energy and vitality, and without it would be no more than a watch without a spring—a beautiful but useless piece of mechanism."—"It is sufficient for my present purpose to consider the two systems as agents perfectly equal in their dependence upon each other, and so intimately united in their functions, that the slightest derangement in the one cannot exist without more or less exciting morbid action in the other; and it often happens that this, by reacting upon the primary derangement, increases it in a very high degree. This view leads me to consider nervous debility as the most frequent if not sole cause of vascular turgescence."

The latter part of the foregoing sentence is so obscurely worded, that it is difficult to understand the real meaning of the author.

"Vascular energy," he adds, "is wholly derived from the nervous system. If, by any means, the nerves destined to supply any vessel, or set of vessels, with this energy, become debilitated or destroyed, then these vessels cease to be capable of propelling the fluids to and from the heart; and, therefore, it inevitably follows that turgescence, more or less severe, takes place, and results in disease, depending upon the organ affected for its particular character. Thus, a sudden

temporary suspension of nervous energy in the vessels of the brain, rendering them for the moment incapable of propelling forward the blood, may occasion giddiness, dimness or distortion of vision, loss or faltering of speech, and all the other well known symptoms of approaching apoplexy: and if these symptoms are neglected, this temporary becomes a lasting loss of energy, producing either immediate death, or a total suspension of vital power in the parts dependent upon the debilitated nerves."

We select a sentence or two from the concluding observations of Dr. Marshall, in order to give to our readers a tolerably full exposition of the pathological views advanced by him.

"That convulsions in children," he remarks, "frequently have their origin in dentition or worms, in acid or crudities, existing in the stomach and bowels, causing irritation of the nerves ramified upon these viscera, is most true; but it is not the less true, that *through the medium of the nerves alone the convulsions are produced:* and it therefore follows, that while we endeavour to clear away the offending causes, we must no less assiduously attend to restore the offending nerves to a healthy tone. But very many cases come under our notice, where none of the forementioned causes are found to be in existence, and yet the convulsive attacks are, in these cases, more intractable and more frequently fatal than in the other! And here I venture to assert, most fearlessly, that, in such cases, examination or experiment will prove the morbific influence to exist at the roots of the spinal nerves, or in the ganglionic system; and that if it has not existed so long as to occasion, by its reaction on the brain, any structural disease there, it will uniformly be found to yield to a patient application of remedies, such as are suggested in the foregoing pages."

"There can be nothing more certain," Dr. M. further remarks, "than that morbid action in the medulla or spinal nerves, reacts upon the brain, to the production of delirium, mania, and structural disorganization; and it surely needs no argument to prove what an important light this fact, once fully ascertained, throws upon the pathology and treatment of mental maladies. In all the three cases of chorea which I have given, the brain was evidently affected; in the two latter, it was so in a very high degree. In the second, the patient wore, for many weeks, all the characteristics of furious mania. Yet, no sooner were the spinal and sympathetic nerves relieved from morbific influence, than the irritation of the brain subsided in the same ratio, and the patient perfectly recovered her senses, and all her mental powers. And let it be remembered, that, previous to this, the curative treatment had been directed to the head itself, without any good effect whatever. Were the state of the spinal and sympathetic nerves more anxiously investigated, than has hitherto been the practice, at the commencement of mental maladies, I am much inclined to think, and I speak from experience when I venture to hint that there would be fewer 'incurable' cases found in our lunatic asylums."

Dr. Marshall anticipates, that, as our knowledge advances, it will be proved that not only epilepsy, but hydrophobia, and all diseases of this class, arise primarily from spinal irritation; and that, with the exception of those cases in which, either from malformation, injury of the skull, &c., the brain becomes the immediate seat of structural disease, that organ is only secondarily affected, especially in the earlier stages of the malady. "I have no hesitation in stating my opinion," he remarks, "that in all cases of epilepsy, where the aura epileptica occurs, the medulla spinalis will be found the seat of irritation."

Dr. M. points to two prevalent errors, adherence to which proves a most serious impediment to a proper understanding and full reception of the pathological views which he has attempted to establish.

"The one is the persuasion or assumption, that, in *all* cases having their origin in spinal irritation, the medulla spinalis will, on *post-mortem* examination, exhibit such morbid appearances as to account for the phenomena developed during life.

This idea I have combatted so much at large in the earlier part of this work," he remarks, "that I need scarcely allude further to it here. Wherever the medulla is the SEAT of the disease developed, as in epilepsy, tetanus or chorea, I should expect to find some lesion of it; but where irritation of it or the nerves has occasioned structural disease elsewhere, I am inclined to think the morbid appearances in it will, for the most part, be invisible to our senses. There can be no doubt that closer attention to its structure, and the very beautiful discoveries now made in its minute anatomy, will lead us to recognise as morbid many appearances to which, hitherto, little importance has been attached.

"Another false idea, or what my experience led me to consider as such, is, that nervous irritation or debility, never can, or does, exist in such a degree as to occasion the symptoms of organic disease, without obvious derangement in the column or tenderness to touch over it, and in the neighbouring parts, being present. With the discoveries of Bell and Bellengeri, alone, before us, this assertion is quite untenable; but no less does experience contradict it.

"In several of the most serious of the foregoing cases, these symptoms most decidedly were absent, yet the mode by which a cure was at last accomplished, proved, beyond all dispute, that in the nervous system alone, and that as more immediately connected with the spine, the cause of the morbid phenomena had existed."

The introductory remarks to the cases of disease of the heart and large blood-vessels, simulated by nervous irritation, are particularly interesting, and deserve the close attention of the practitioner. Their length will not permit us, however, to insert them here.

Under the head of diseases of the lungs, occasioned by nervous irritation, Dr. M. states, that it is his opinion, derived from practical observations, that the original seat of the morbid action in phthisis pulmonalis, is in the nervous system.

"I have," he remarks, "already adverted to the undeniable fact, that it is from the nervous system alone the vascular derives the vital energy by which it performs its functions, and that hence debility or irritation at the root or in the course of a nerve, or set of nerves, must inevitably produce morbid action in the tissues on which they are ramified; whether that be the heart and blood-vessels, the lymphatics, absorbents, or any of the viscera, the effect will be the same, though the particular character of the disease developed will depend upon the seat of it, as well as upon many collateral circumstances. When a vessel, larger or smaller, is deprived of the power by which it performs its functions, it must become either turgescent or collapsed—most commonly the former—and as it is impossible for it quietly to continue in this state, congestion follows more or less rapidly. If, on the contrary, collapse takes place, the consequences will be very different, but ultimately not less destructive of health and life."

Dr. Marshall does not recollect a single instance in which an individual in the incipient stage of consumption did not mention or readily admit—

"That among the first unpleasant sensations he could recollect, was that of coldness over the whole body, but *more particularly down the back.* Nothing is more common than to hear them compare this to the sensation of cold water suddenly dashed upon the shoulders, or a wet cloth closely applied to them; and the remark follows, that no application of external heat, or even active exercise, tended to remove this sensation; evidently proving that it arose from sudden and serious diminution of nervous energy. If, at this period, nothing is done, and successfully done, to rouse the system, and bring it up to a healthy tone, morbid action in some viscus must be the result; and owing to their peculiarly delicate structure, and varied functions, this too often occurs in the lungs."

"The most minute and laborious researches have, in the present day, been made by various eminent members of our profession, into the nature of the changes and appearances which take place in the lungs after morbid action is fully established in them. In the results of their investigations I find nothing hostile to my opinion, that the producing cause of that morbid action, is deficiency of nervous energy; and that, therefore, until we can restore that energy

we labour in vain to remove the effects produced by its absence; and that if we do succeed in restoring it, the affection of the lungs will disappear synchronically, provided it has not advanced so far as to incapacitate these organs for their office of oxygenating the blood."

Dr. Marshall does not coincide in the general opinion entertained of the incurability of consumption.

"It must be admitted," he observes, "that when they have become diseased, the lungs have less chance for recovery than any other viscus. Their functions are varied and laborious, their employment absolutely incessant, in addition to which, when ulceration takes place, the continual irritation produced by their constant action, and the contact of the air respired, render the difficulties of a cure serious and manifold. Still it is now too much the fashion with a certain class of our profession, when they find or fancy, by stethoscopic examination of the chest, that lesion of the lungs is present, to condemn the patient to inevitable death, and thenceforth, abandoning all active measures for his recovery, adopt a mere palliative mode of treatment, under which time, never to be regained, is lost, and the patient glides into that incurable stage in which they had at first pronounced him to be."

"The fact is, that where the nervous energy is restored by judicious medical treatment, or by the rebound of a powerful constitution, the efforts which Nature makes to repair the devastations of disease are most truly astonishing. Who is there, in the habit of pursuing morbid anatomy, that is not made aware of this? How often do we find in the lungs of persons who never, during life, complained to us of their respiratory organs, or at least said no more, than that formerly they were liable to bad colds, not only cicatrices indicative of former lesion, but substances varying from the size of a millet seed to that of an egg—some resembling cheese, sometimes chalk, and contained in what evidently had been the sacs of tubercles that had run their course, discharged their contents, and then, in spite of this new deposit, been forcibly closed up by the curative efforts of Nature! And do we not, in all the viscera, meet with similar instances of this wonderful power of adaptation to existing circumstances in the animal economy? Why, then, let me ask, do we resign our patients to 'a palliative treatment,' while a shadow of hope remains, or any plan has been left untried? and, above all, why do we send them to die far from their home and their friends? When that home is by the sea-side, I admit that removal from it is quite necessary; but I will venture to say that no consumptive patient ever yet was saved by being sent out of England who might not have been saved by being kept in it, and judiciously treated."

"In the following cases, it is to be observed, that both in those which ended fatally and those which recovered, very great spinal irritation, and, in some of them, deformity of the column or displacement of some of the vertebræ, was present; and not one case of consumption has come under my care or notice, since my attention was turned to this subject, in which I did not find this symptom."

Dr. Marshall considers, that phlegmasia dolens is another disease of purely nervous origin. He conceives it, however, to be of very rare occurrence, having met with but a very few instances of it in an extensive practice in puerperal cases.

"These, however, were sufficient to convince me, that all the painful and intractable phenomena of the disease were plainly traceable to pressure or other injury of the nerves, either before or during parturition, causing a deficiency of energy in the nerves themselves, and, consequently, languor and inefficiency in the action of the vessels dependent upon them; hence the pain and intumescence of the limb; and, of course, when once intumescence takes place, it *must* react upon the nerves to the increase of all painful and morbid phenomena. In the few instances in which it occurred to me I found leeching at the groin, and over the whole sacral region, and frequent frictions with anodyne and stimulating liniments on the sacrum, the groin, and the affected limb, most decidedly beneficial; scarification I never attempted."

We offer no comments upon the views advanced in the work before us.

Our chief aim has been to present, as much as possible in the author's own words, an outline of those deductions which he believes the facts advanced warrant him in drawing, in relation to the pathology of several of the most important diseases which the physician is called upon to treat.

If the views of Dr. M. be correct, they point to a very important modification in our plans of treatment, and to a greater certainty of success in the removal of certain maladies than has followed the curative measures hitherto pursued. To enter upon an examination of those views would demand a careful analysis of the numerous cases adduced in their support, and give to this article an extension altogether incompatible with our present limits. We cannot, however, close our notice of the work of Dr. M. without presenting a general outline of the remedies which he considers to be best adapted to the removal of those affections which are dependent upon nervous irritation.

It is, he conceives, from the result of seventeen years of study and practice, "on the medium of the surface that we must *principally* depend in the cure of nervous debility or irritation."

"In the sulphate of quinine, and the salts of iron, zinc, and copper, as well as the vegetable bitters, combined with alkalies and gentle laxatives, I have found most admirable adjuncts, but never yet did I succeed with them alone in curing any case of nervous or medullary irritation, which had advanced so far as to assume the character of any organic disease."

To remedies which produce "a cuticular irritation, such as blisters, ointment of tartarized antimony, and the ammoniacal and terebinthine linements," he has given the fullest trial, and found them all useful, "each in *their* own way and time," with the exception of the terebinthine, the stimulating properties of which he has found to be more than counter-balanced by their tendency to produce irritation of the kidneys and neck of the bladder. To the antimonial ointment, he remarks, he is by no means partial, yet the cases which he relates, particularly the second and third case of chorea, will show, he observes, that he has occasionally succeeded in "making a cure with it," where both blisters and issues, as well as depletion, had entirely failed.

"There may be two reasons for this: it is generally applied to a much larger surface, and the discharge produced by it is from a perfectly different source and of a different character from that procured by blisters, approaching much more nearly to the nature of pus. The ordinary action of cantharides is confined to the epidermis, while the antimony, penetrating the cutis, exerts its influence more directly upon the nervous and muscular tissues. My objection to its use arises from the capriciousness as well as harshness of its operation; the great and extremely irritating pain which it occasions; and the severe sickness of stomach consequent on its absorption into the system; often producing effects, in a delicate frame, hardly less distressing than the disease it was intended to remove. Moreover, in cases where I have found its application a complete failure, I have succeeded with what, *a priori*, appeared a much less efficient agent. Nor could I ascribe this altogether to idiosyncrasy; it rather seemed to me to arise from some as yet unexplained difference in the nature of nervous disorders."

Dr. M. has employed ammoniacal linements extensively, and with the very best effects; yet they too have occasionally failed; they have, he conceives, this disadvantage, that, in cases where it is not desirable, they irritate the skin and produce an eruption.

"Simple friction, even without any rubefacient, over the seat of the principal nervous centres, and over the whole thorax and abdomen, he has found of very

important service, particularly in the earlier stages of nervous debility. But, to render friction of any use, whether with or without rubefacients, depends entirely on the steadiness of its repetition, as well as on the length of its application. It is not rubbing the spine or the seat of the sympathetic system or the thorax, for a few minutes at a time, and then wholly neglecting it for days or weeks together, that will avail. Friction, to be of any use, must be continued for an hour at a time, at least twice, if not three times each day, so as to prevent the nervous system from losing, in the interval, the impetus given to it; and, if not so practised, it may as well be omitted altogether. Nor even with this attention to the steadiness and frequency of its application must it be expected that the sanitary influence will become immediately evident."

Against the use of mercury, in any of its forms, in the treatment of spinal or nervous irritation, Dr. M. warns the younger members of the profession; so decidedly injurious has he found it, that, at one period, he refrained from prescribing even half a grain of calomel *per diem*. He, however, now readily admits that "where mere functional derangement of the liver or bowels has been produced," a cautious exhibition of the blue pill, alternated with mild laxatives, will be found not only beneficial, but indispensable. Excessive purgation he has always found very decidedly injurious.

On the use of the several mineral waters of Great Britain, and their effects in the treatment of nervous irritation, we shall not follow the author in his remarks.

"Change of air and scene," he observes, "particularly if it be to a very dry atmosphere, is a measure which ought never to be lost sight of in treating cases of nervous or spinal irritation. It is only when a very considerable advance towards a cure has been made, that the sea-side or sea-bathing is advisable. I have always found the greatest benefit accrue from having my patients as much in the open air as their strength will admit. The very utmost care, however, ought to be observed to prevent exercise ever being pushed the length of fatigue; because every time a person labouring under irritation of the spinal nerves is fatigued, he has lost just so much ground on the road to recovery.

"Gentle exercise in an open carriage, or sailing in an open boat, above all, if the recumbent posture can now and then be assumed, are strikingly efficacious, when the cure has made a certain advance; but, too often, these very measures prove destructive, by being adopted at a too early period of the complaint, or an unsuitable season of the year."

"To keep the mind in an easy and cheerful frame, I have always found to be of the last consequence. Anxiety, deep thought, the indulgence of the angry passions, or habits of abstruse reasoning are fatal barriers to a cure."

The foregoing brief exposition will enable our readers to judge of the pathological views and therapeutical measures advocated in the present publication of Dr. Marshall; as to how far they are in accordance with facts, and the results of experience, we offer no opinion. The particular points embraced in the work are certainly of importance, and deserve a candid and close examination before they are adopted as true or rejected as altogether false.

D. F. C.

ART. XXIV. *Elements of Bed-side Medicine and General Pathology; or a General Disease-Discourse, with a Sketch of the Origin, Progress, and Prospects of Clinical Medicine and Surgery, followed by an Exposition of the Creeds of Medical Materialism and Vitalism, and a Confession of Mixed Medical Faith, entitled Vegetable, Brute, and Human Organizationism, etc. etc. The whole chiefly grounded on a digested range of select Analytical and Condensed Translations, with Eductions from the writings of Standard Authors, French and British.* By J. STEWART THORBURN, M. D. London, 1836, 8vo, pp. 437.

We really feel at a loss how to convey to our readers any correct idea of the work of Dr. Thorburn. Although the title is sufficiently copious, and apparently explicit enough, yet whoever shall attempt from it alone to form any conception of the materials of which the work is composed, the subjects embraced in it, and the manner in which those subjects are treated, will find himself, we suspect, wandering widely from the truth. The work professes to be a treatise upon clinical medicine and general pathology, but we must candidly acknowledge that we can find in it but a very small amount of matter which can be legitimately referred to either of these important subjects. The author, we believe, lays no claim whatever to originality so far as regards his matter. He confesses that he has "quarried" his facts and views from certain of the writings of Landre-Beauvais, Chomel, Ratier, Rostan, Serre, Cayol, Dance, Bricheteau, &c., and by "working these up in accordance with a digested plan," he trusts that he has "succeeded in architecturing a literary edifice which may be considered in some degree worthy of being occasionally tenanted by the mind of the clinical student." From the foregoing sources, Dr. T. has unquestionably succeeded in culling a few useful facts and very pertinent practical hints and observations; but whether he has presented them in a form best calculated for the instruction of his readers, is, to say the least, somewhat doubtful.

If, however, the present volume be deficient in originality of matter, it is certainly original in manner. With those subjects more properly appertaining to the science of which he professes to treat, the author has contrived to interweave most curiously others of so dissimilar and discordant a character, that no one would have dreamed of meeting with them in a medical treatise; and the whole is expressed in a style so very unique, so replete with puns, with out of the way terms and fantastic modes of expression, that, did not the name of Dr. J. Stewart Thorburn appear upon the title page, we should almost have suspected that the facetious T. Hood, tired of "architecturing" comic annuals, had tried his skill in concocting the elements of "bed-side medicine." Thus, connected with sundry grave remarks upon cliniques, etiology, symptomatology, and pathology, or, as our author has anglicised it, "disease-discourse," we have a parallel between the character of the Arabs and that of the Highland Scotch, a disquisition upon Arabian literature, an epigram of Martial, an anecdote of one of the Bishops of Llandaff, an exposition of literary and scientific hoaxing, forging, trimming, and cooking, with references to Rowley and Chatterton, Shakspeare and Ireland, Judge Breckenbridge and the American Philosophical Society, an examination into the Quakerism of Benjamin Franklin, &c. &c. But the heterogeneous materials of which Dr. Thor-

burn has "builded up" a "literary edifice" for the mind of the clinical student, will be best shown by a reference to the table of contents of one or two of the sections, as given by himself.

Thus Part II. treats, among other things, of "a source of interminable fallacies in medicine. 'Matter of fact practitioners.' Mistakes and frauds of observers. Hoaxing, forging, cooking, and trimming. More false facts than false theories. Forgeries. The bat's wing. Teague O'Regan and the *Philosophical* Society. The value of sound theory in science. Influence of MEDICAL FAITH--Homoöpathism--Allopathism--Antipathism. Death of the ex-empress Josephine. Expectantism. Eclectism. Broussais and the Moor of Venice. Logic—Attention paid to it by materialists. What *is* logic?—Inattention to, on the part of physicians and theologians. The affectation of modern infidelity. Remarks."

Part. III., section 7, treats of "Observation and experiment. Advantages derived from observation. An ignus fatuus which oft bewitches. Cracks let in light. Observation of the moral and physical world. Locality of the intellectual faculties. Starting point of many discoveries. *Franklin and the French!* Seeming exceptions to the laws of nature. Should a medical observer be 'a genius'? Requisites to observe well in medicine. How Newton effected all his discoveries. Ten generations of a garden grub. Mental flexibility. Vitiated judgment. Hobby hypotheses. Prejudices. Fontanelle. Newton. Visions of the Apocalypse. Self-examination. Scepticism. Observation and induction. Conducting medical observations. University of Edinburgh. Bricheteau. Pinel. How to interrogate the sick. Valuable hints for clinical journalizing. Elementary, triple, and multiple complications. Concluding remarks."

Section 10 treats of "Occasional or exciting causes. Pan, Epi, and Endemics. Atmospherical and medical constitutions. There is a time for every thing. *Atmospherical electricity*—Dalton—Forbes. Idiopathic and symptomatic diseases. Period of incubation. Specific causes. Circumfusa. Excreta. Gesta. Body and mind. Tristram Shandy. Courier from Marathon. Italian lovers. Fanaticism. *Rowites. Irvin*ites. Contagion. Fracastor's creed, &c. &c."

As specimens of the author's very peculiar style, we present the following extracts. The first is from the preface, page ix.

"Part I.—Sketch of the Origin, Progress, and Prospects of the Clinique—will, I hope, be deemed useful and interesting to those for whose notice it has been specially framed. In preparing it, the sources most freely gleaned from, are the dissertations of MM. Bouillaud and Serre. After having *formulated* an extensive body of notes upon the subject, which grew upon my hands during a course of miscellaneous reading, M. Serre's pamphlet came into my possession. A hurried perusal of it, all but induced me to wholly abandon my then intention of putting the historical article, which had been previously *redacted*, into the printer's hands; and in *lieu* of it, to substitute a literal translation of the *Recherches*. But upon a more careful perusal of the *brochure* just *instanced*, I found that though M. Serre had grounded his dissertation upon facts adduced by many more authors and commentators than had been consulted by me, yet still the tendency or *drift* of his essay, as interpreted, did not appear to bear upon several points of presumed interest to the clinical students of this country. I finally, therefore, determined to take M. Serre's compilation to pieces—so to speak, with a view to reconstruct, under appropriate modified titles, an article embracing the *gist* of the researches previously noted, in addition to those upon other points more fully supplied, and it may be added—*guaranteed*, by M. Serre's more general, and of

course, more correct, acquaintance with the French literature upon the interesting matter of investigation under notice."

The following *punical* slap upon Broussaiism occurs as part of a note to page 128:—

"Whoever has watched the progress of French medical literature, during the last few years, must have been struck with the many softenings down and trimmings which Broussais's doctrines and practice have undergone. Broussaiism, as it is in 1835, is not Broussaiism as it was. Owing to the successive *embraces* which the '*new*' doctrine has received from its author and his brother *bruins* of the *press*, it has assumed a much more *bear*-able shape, and seems less exclusively calculated for the meridian of Paris. Not that 'the only true doctrine' was ever destitute of what the critics of the legitimate drama call 'points,' for, exclusive of egotistical attacks on its honourable opponents, as Professor Chomel rather cynically observed, it has three cardinal *points—gastritis, gum-water*, and—*leeches!* Viola, toute la medecine physiologique!"

At page 84, we meet with the following remarks on morbid anatomy:—

"Pathological anatomy, must, however, be considered as the serf, not as the autocrat, of the healing art. That its progress has been retarded, and its cause temporarily injured by the exaggerations of undiscriminating eulogists, cannot justly be doubted. By many it is cried up as if, already, it were the right arm of the art of healing! In the present state of science, at best it is no other than the little finger, so to speak, of the entire hand of the genius of medicine; and is it saying too much, that the treatment of disease, if grounded on our existing knowledge of morbid anatomy, is, from the very nature of things, infinitely more precarious, and less rational, than that grounded, even solely, on the data of symptomatological empiricism? Such doubts are hazarded, not against the value in itself, of a sub-department in medicine confessedly of such intrinsic worth, though beset with difficulties, neither few nor small,—but against the prejudice and apathy entertained towards pathological anatomy by several, by whom, in fairness, it should be borne in mind that charges of inadequacy and misdirection are often falsely attributed to a science, instead of either inability on the part of the instructor, or to misapprehension on the part of pupils. In applying the information furnished by morbid anatomy, it should be especially remembered as a caution, that many pretend to teach what they have yet to learn—thus bringing their maltreated subject into discredit more than misplaced.

"How, then, should the question be answered—where does the failure lie when scarcely any or no alteration is detected, on making cadaveric inspections? How hundreds are led away by the sweeping scepticism of a few! Before joining in the crusades preached by certain medical Peter-the-Hermits from such texts, would it not savour less of imbecility to inquire whether the failures of the herd alluded to, do not rather indicate how finite the intelligence, how helplessly unaided are the senses of observers, than prove any insufficiency upon the part of the science? To reply, therefore, that tangible lesions or appreciable changes have not been discovered, is certainly much more becoming than to assert that 'none exist, or have existed?'. So much for disbelievers. But there are unbelievers too; and the scepticism of prevention is ever the most childish of any, as the finger of history shows forcibly in the case of unbelieving men of quantity. Ultra-arithmeticians, it would seem, have ever been dogmatical, as in Pascal's time, when more than a poor handful of such sceptics took upon themselves to determine that there were just 27,000 stars—nor more nor less; by these hilts; for they asseverated, in the spirit of Falstaff, and produced their stratches and calculations, likewise, as an *ecce signum*. After star-gazing, however, through the bound telescope, to peer through which they at first seemed somewhat reluctant, the majestic revelations of that world-reading instrument smote them in hopeful humiliation. Even the most previously self-sufficient ceased for a time to look, ανθρωπος-like, (ανθρωπος-like?) heavenwards, and withdrew, with downcast eyes, to resume their alphabets of the sciences, and recommenced every thing afresh, as infants even in self-knowledge!"

Upon the whole, Dr. Thorburn has succeeded in "architecturing" an extremely amusing and to a certain extent instructive volume, out of odds and ends industriously collected from the works of others. The present being said, at the foot of the last page, to conclude only the first volume, we presume that we are to be furnished in due time, with "other medleys like unto it." Such productions are certainly beneficial to the paper maker, printer, and book binder; whether equally so to the cause of medical science, we shall leave to others to determine. D. F. C.

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Art. XXVI. *Die Cholera in Wien. Ein beytrag zur lösung der wichtigen fragen; Worin besteht das wahre wesen dieser krankheit? Wie wird ihr zuverlässig vorgebeugt? Durch welche cur-methoden werden selbst die im höchsten grade befallenen schnell und sicher gerettet? Wie ist man im stande diese seuche minder verheerend zu machen, und die furcht vor selber ganz zu verbannen? Als resultat hiesiger beobachtungen und eines heilverfahrens, durch welches von* 143 *cholerakranken, in den tagen der grössten gefahr,* 139 *gerettet und vollkommen wieder hergestellt wurden. Zur allgemeinen beruhigung mitgethielt.* Von Anton Dominik Bastler, Docter der Medicin und Chirurgie, Ordentl. mitglied der löbl. medicinischen facultät, &c. Vienna, 1832, 8vo, pp. 134.

*The Cholera in Vienna. A Contribution towards the solution of these important questions:—In what consists the real nature of Cholera? How may it with certainty be avoided? By what method of treatment can those affected with it in its most violent forms be quickly and safely restored to health? In what manner can the epidemic be rendered less destructive and completely divested of its terrors? Being the result of the author's own observations, and a method of cure by which* 139 *out of* 143 *patients affected with the disease at the period of its greatest virulence, were perfectly cured. Communicated for the benefit of the public.* By A. D. Bastler, Doctor of Medicine and Surgery, &c.

Did the work before us present any thing like a satisfactory solution of any one, much more, all of the weighty questions propounded in its title page, its publication would unquestionably have conferred a benefit of no trifling magnitude upon the human race. But, after carefully perusing it, while we admit that the author has thrown out a few very pertinent and useful hints in relation to the important epidemic of which he treats, we are under the necessity of saying, that, in our opinion, he has completely failed in elucidating either its real nature, its causes or its treatment. The work, in fact, contains very little, if any thing, in relation to the disease, in the slightest degree new to the great body of the medical profession; while its leading propositions have been either denied or controverted by subsequent writers. The pathological views of Dr. Bastler, as an hypothesis, may be praised for their ingenuity, but cannot be said to be established by well ascertained facts, and his method of cure, though far more rational and effective than the multitude of those which have received the sanction of more imposing names, has, nevertheless, been fully tried, without being found adequate to lessen, in any great degree, the mortality of the disease, during, at least, its prevalence as an epidemic.

Judging alone from the numerous '*clear*' expositions of the nature and causes of cholera, that have been so confidently presented to the public within the last eighteen years, and the '*almost invariably successful*' modes of treatment which have been announced with becoming gravity, and authenticated by the results of extensive experience, we should certainly conclude that this disease, the prevalence of which so lately inspired all classes of society with alarm, and resisted the best directed curative measures, is now to be ranked among the best known and most easily and certainly managed of any upon our nosological charts. Were such the case in fact, happy would it be for the human family!

That we are now much better acquainted with the nature and exciting causes of cholera, than we were previously to its occurrence, as an epidemic, in Europe and this country, is unquestionably true. And that we are better able now than formerly to arrest its fatal termination, and in a far larger number of cases, is likewise certain. But while we acknowledge that the disease is divested of much of its mystery, and is more completely under the control of the physician than it was on its first appearance in India, we fear that it would be very far from the truth to say that we know enough of its pathology and proper management to be able to rescue from death upwards of nine-tenths of those attacked by it in its most aggravated grades, as Dr. B. would lead us to believe was his good fortune. Were such the case, the disease might truly be said to be entirely divested of its terrors.

We do not conceive it to be necessary to enter into an analysis of the work before us, nor even to present a general outline of the author's views and therapeutical directions. To do either in such a manner as to enable our readers properly to understand the subject in all its bearings, would require more space than we conceive its importance merits—more especially as the work appears to us to have been written rather with the view of calling the attention of the public to the pre-eminent skill of its author as a cholera physician, than for the more legitimate purpose of instructing the medical profession. D. F. C.

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Art. XXVII. *Revista Medica Fluminense, publicada pela Sociedade de Medicina do Rio Janeiro.* Nos. 1 to 5, for April to August, 1835, inclusive. Rio Janeiro, 1835.

This well conducted, but unpretending periodical appears to have been undertaken to supply the place of a weekly journal which had previously existed at Rio Janeiro, but was discontinued for the want of sufficient patronage.

Each number contains about forty-eight octavo pages, and is divided into three parts. The first presents an account of the acts and deliberations of the Medical Society of Rio Janeiro; the second, memoirs and original papers and cases, and articles translated from foreign periodicals, &c. The third part is devoted to critical analyses, extracts from medical publications, articles devoted to the accessory sciences, varieties, notices of learned societies and the premiums offered by them; bibliographical notices, correspondence, and announcements of new medical publications.

Besides the proceedings of the Medical Society, the numbers before us contain, in the original department, a history of a case of volvulus cured by the introduction of a sound per anum by Dr. Meirelles. A memoir on tobacco by Dr. Maia. A description of two native plants by Dr. Xavier. On the miasma of cholera by Dr. Candido. Relation of a case in which there occurred an ulcer penetrating the aorta at its origin with the heart, giving rise to an effusion of blood into the cavity of the pericardium, by Dr. Pimentel. Topography of the city of Recife, in the Province of Pernambuco, &c. &c.

The contents of these five numbers have impressed us with a very favourable opinion of the state of medical science at Rio Janeiro.

D. F. C.

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ART. XXVIII.—*Mémoire sur le Cholera-Morbus, compliqué d'une Epidémie de Fièvre Jaune, qui a régné simultanément a la Nouvelle Orléans en* 1832. Par M. MICHEL HALPHEN, Docteur Médicin a la Nouvelle Orléans. 8vo. pp. 192. Paris, 1833.

*Observations sur le Cholera-Morbus qui a régné a la Nouvelle Orléans en* 1833 *et en* 1834; *faisant suite au Mémoire sur le Cholera-Morbus de* 1832. Par M. MICHEL HALPHEN, Docteur Médicin, &c. 8vo. pp. 182. Paris, 1835.

*A Memoir upon Cholera Morbus complicated with Yellow Fever, as it prevailed in New Orleans during the epidemic of* 1832.

*Observations upon Cholera Morbus as it appeared in New Orleans, during the years* 1833 *and* 1834; *being a Sequel to the foregoing Memoir.* By M. M. HALPHEN, M. D., of New Orleans.

These two works of M. Halphen present an extremely interesting history of the epidemic cholera, which prevailed at New Orleans, during the years 1832, 1833, and 1834. They embrace, likewise, the detailed account of one hundred and twenty-three cases of the disease, which fell under the care of the author; the whole presenting a very full clinical exposition of its mode of invasion, symptoms, progress, and termination, together with the plan of treatment which, according to his statement, he has found almost invariably successful.

The Observations of M. Halphen are the more interesting, from the fact of the cholera having prevailed at New Orleans, in conjunction with an epidemic of yellow fever; many of the patients being affected with both diseases either simultaneously or successively.

The author presents, in the first place, a view of every important particular connected with those localities, where the two epidemics prevailed most extensively. Pointing out succinctly the nature of the soil, climate, water, buildings, public and private establishments; together with the food of the inhabitants, their modes of life, and the defects in the sanitary regulations of the city, and in their administration. The period and manner in which the cholera made its appearance in New Orleans, are then considered.

Towards the decline of the summer of 1832, there suddenly occurred, we are told, in that city, numerous well characterized cases of malignant remittent fever, of gastro-cephalitis and of enteritis. On the 22nd of September a few scattered cases of yellow fever were observed. The cases increas-

ed during the first days of October, and by the fifteenth of that month, the disease had assumed a decidedly epidemical character. Never, according to M. Halphen, did the fever present symptoms of greater intensity, or demand a more active treatment. General depletion in the commencement of the attack, and other antiphlogistic remedies were almost invariably demanded—remedies, which our author has found to be altogether inadmissible in other visitations of the disease.

While the yellow fever was thus prevailing as an epidemic, the cholera, likewise, made its appearance at New Orleans. M. Halphen would appear to refer the introduction of the latter into that city, to the arrival of passengers from on board the steamboat Constitution, from St. Louis. He nevertheless waives the question as to its contagious character, admitting that "both the yellow fever and cholera are produced by a morbid state of the atmospheric air." "The miasms which give rise to cholera, or which result from it, are, in his opinion, of so deleterious a nature, that they are capable in combining with those miasms for which they have a particular affinity, of generating a source of contagion, sufficient to produce an epidemic, wherever circumstances favourable to the generation of such miasms are present." "The cholera," he remarks in another place, "never manifests itself epidemically excepting when local causes favour its developement; and among these causes, the insalubrity of a neighbourhood is to be ranked at the head of the list. Hence, when we consider the physico-medical topography of New Orleans, we can readily explain the reason why in that city, the disease has prevailed so extensively and permanently, and has been attended with so great a degree of mortality."

In 1832, out of a population of about fifty thousand, one hundred deaths from cholera were known to take place daily; and in the space of a very few days one-seventh of the entire population was included among its victims. During the two succeeding years the disease recurred; and sporadic cases, more or less numerous, according to accidental circumstances, have appeared every year subsequently.

On the 12th of November, 1832, the wind changed to north-west, and the temperature of the atmosphere became suddenly reduced. In less than three days from that period the epidemic had almost entirely ceased; subsequent to the 16th of the month, scarcely a solitary case was observed.

The author presents the details of fifty-seven cases of cholera treated by him during this year. Eight or ten of these, were cases in which the disease occurred in subjects, who were labouring under yellow fever. From these cases, it would appear, that the antiphlogistic treatment, while it evidently reduced the violence of the fever, favoured the developement of cholera. It was only by the adoption of an opposite plan of treatment, that the author succeeded in controlling the latter disease, when it occurred under such circumstances.

Several of the cases detailed by M. Halphen seem to prove, what the author asserts to be invariably the case, that the occurrence of an attack of cholera reduces almost immediately the intensity of the symptoms of yellow fever, when the patient has been labouring under this disease; and that in proportion as the former becomes developed, the latter abates, and finally disappears. The author has never, however, seen the symptoms of cholera cede upon an attack of yellow fever; hence, he concludes, that the first has

a much more malignant influence upon the organs of the body than the latter.

Another fact not less certain, according to M. Halphen, is, that persons who have not become acclimatized to the yellow fever, arriving in New Orleans during the prevalence of cholera, have not been affected as they would have been in ordinary seasons, or had the cholera not prevailed. Again, in such of them as had experienced an attack of cholera, the disease, when it did occur, was less severe than even in the acclimatized, and, finally, many individuals labouring under gastro-enteritis, have found themselves completely cured of it, after recovering from the cholera.

The remedy upon which the author chiefly depended for the cure of cholera in the cases which fell under his care, was sulphat of quinia, combined with lactucarium; and the facts which he has adduced, would all certainly appear to prove it superior in efficiency to all the other remedies that have been proposed for this disease. It was administered either in pills, composed each of three or four grains of sulphat of quinia and half a grain to a grain of lactucarium, and administered every five, ten, fifteen, or twenty minutes, until reaction took place; or forty grains of the sulphat of quinia and from six to ten grains of lactucarium were dissolved in six ounces of fluid, of which a spoonful was given at intervals more or less short, according to the circumstances of the case. Six to ten grains of the sulphat of quinia, and from two to four of the lactucarium, in a pint of mucilage, were also injected per anum, every fifteen minutes, until the diarrhœa was suspended. Sinipisms and stimulating liniments to the surface were at the same time frequently employed.

By this plan of treatment, we are assured by M. Halphen, that a general, moderate, and regular reaction was almost invariably established, and the speedy convalescence of the patient ensured.

The author has given an account of but few autopsical examinations, and these are very deficient in their details.

Only a single case is recorded in the works before us, in which a fatal result ensued under the use of the quinia and lactucarium. We should have been more satisfied, and been enabled to arrive at a more positive conclusion in regard to the real value of the remedy, had the author enabled us to judge of the final result of the whole number of cases in which it was employed by him; we are always suspicious, when, in an epidemical disease of so violent a character as cholera, we receive statements of the almost universal success of any remedy or set of remedies. Our own experience has taught us, that, during the height of the epidemic, a very large number of cases will prove rapidly fatal under almost any plan of treatment. We do not wish to be considered as insinuating a want of honesty or perfect candour on the part of M. Halphen in the statements given in the works before us; we merely regret that all the data necessary to form a satisfactory opinion in regard to the efficacy of the combination of quinia and lactucarium in the treatment of cholera have not been afforded us.

In the observations of our author upon the cholera as it appeared at New Orleans, in 1833, he remarks, that all the facts he has been enabled to collect, establish fully the predominance of that disease over every other. In the preceding year, all the strangers who arrived during the simultaneous prevalence of the cholera and yellow fever were exempted from an attack of the latter, which was not the case this year, the cholera having disappeared

previously to its occurrence. Those individuals, we are informed, in whom the character and effects of the fever had been modified, in consequence of its complication with cholera, experienced no attack of the former in 1833, notwithstanding it was accompanied this year by very different symptoms and demanded a plan of treatment very dissimilar from that indicated the preceding year;—the disease being attended by no pain of the epigastrium, in the majority of cases; the patient's skin being covered with numerous petechiæ, and neither hæmorrhage nor vomiting being present.

In all cases of cholera, as well during this as during preceding and subsequent years, M. Halphen insists upon the complete efficacy exhibited by the combination of sulphat of quinia and lacticarium.

In the short notice which the author has given of the cholera of 1834, we have the following very just and candid remark.

"In my two previous publications, in relation to this disease, I have, I conceive, shown very fully what was its nature and character as it occurred in New Orleans, and what was the plan of treatment by which I have found it most successfully managed. I pretend not, however, to affirm that the cholera, wherever it has made its appearance, has been identically the same disease with that which prevailed in Louisiana. I have merely stated what I have myself observed, and it is only by comparing these local observations with such as have been made in other places, with a similar degree of impartiality and candour, that we can hope to arrive at any certain and useful general conclusions."

D. F. C.

# QUARTERLY PERISCOPE.

## FOREIGN INTELLIGENCE.

### ANATOMY.

1. *On the Entozoa which are occasionally found in the Muscles of the human subject.*—Professor Harrison exhibited to the Medical section of the British Association, at the meeting in Dublin, preparations and drawings of a speckled appearance not unfrequently met with in different parts of the muscular system, and detailed the particulars of several cases in which it had existed: he expressed his full concurrence with the opinions advanced by Mr. Owen, in the Transactions of the Zoological Society of London, as to the animal or vital character of the bodies to which the appearance is owing. He next remarked some interesting coincidences in the cases he had examined: thus, in one instance, where the muscles were very generally affected, he found a large cyst in the liver which contained several hydatids. These were exhibited to the meeting. In all the other cases there were marks of scrofulous disease having existed, either recently or at some remote period: thus, in three cases the lungs were a mass of tubercular matter, and in another there were caries of the lumbar vertebræ and scrofulous suppuration in the adjacent structures. The Professor further stated, that in all the cases he had examined, this appearance was almost confined to the voluntary muscles: he had never met with it in the heart or intestinal tunics, but had found it about the circumference of the diaphragm, and in the other mixed muscles to a much less degree than in the voluntary: these bodies he stated to be more numerous on the cutaneous than on the deep surfaces of muscles, and to be deposited in the interfascicular cellular tissue, rather than in the fasciculi themselves.—*Lond. & Ed. Philos. Mag.*, Dec. 1835.

2. *Transposition of the Abdominal Viscera.*—The following remarkable example of this, observed in a post mortem examination of a patient, in the Calcutta General Hospital, is recorded by N. Raleigh, Esq., in the *India Journal of Medical Science for February*, 1834.

"The large lobe of the liver occupied the left hypochondrium, the smaller lobe crossed the scrobiculus cordis, towards the right hypochondrium; the gall bladder which was filled with bile had its fundus directed towards the left side; the œsophagus passed through the diaphragm on the right of the spinal column to join the stomach, the cardiac extremity of which took up the right hypochondriac region, and behind and below it was the spleen; the pyloric portion of the stomach passed across the epigastrium towards the left side, the duodenum taking its course contiguous to the gall bladder, formed its curvature with the convexity to

the left, and crossed the second and third dorsal vertebræ to the right side; the small intestines then commencing, took their direction from right to left, and entered the caput coli in the left ilium, the ascending colon passed up the left side of the belly, the descending down the right side, to form the sygmoid flexure in the right iliac fossa.

"The disposition of the blood vessels was also reserved. The inferior vena cava was placed, at least, half an inch to the left of the aorta; the left renal artery was the longer of the two, and passed behind the vena cava; whilst the right emulgent vein crossed before the aorta, and the right common iliac vein passed behind the left common iliac artery.

"Although a complete transposition of the contents of the abdomen existed, with exception of the wide separation of the great blood-vessels, the several viscera maintained their position with relation to each other, as when distributed in a natural manner."

The contents of the chest observed their natural disposition.

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3. *Case of Complete Absence of the Uterus.*—A female, forty-six years of age, who had never enjoyed good health, and was of weakly constitution, had arrived at the age just mentioned without having once menstruated. At the period of puberty, the body and mammæ were well formed; but the menstrual discharge was replaced by a constant pricking pain in the left hypochondriac region, occasionally shooting down to the pelvis. The exacerbations of the pain were accompanied with vomiting, and occurred generally every month, but not regularly. In the twenty-sixth year of her age, for the first time, a slight discharge of blood took place from the vagina, the patient being affected with acute fever. At the age of forty-six she was compelled to have recourse to medical advice, from an increase of pain in the left hypochondrium. The symptoms were dissipated by antiphlogistic measures. The woman now permitted an examination of the genital organs; the external parts were in a normal state, but the vagina, which was about one inch in length, terminated in a cul de sac. In the course of a year this patient died of peritonitis; and, on examining the body, Dr. Albers found the internal genital organs in the following state: the vagina, as already said, terminated in a cul de sac. About one inch and a half from it, and placed laterally, were found two bodies not larger than a good-sized walnut; these were oblong in shape, and did not seem to have any connexion with the vagina; however, each of them sent off, upwards and sidewards, a distinct bundle of fibres, terminating in the vicinity of another body, which appeared to be the imperfectly developed ovary. Each of the oblong bodies, which we must consider as the rudimentary elements of the uterus, contained a small cavity, lined with a membrane analogous to mucous membrane. The tissue of the parietes, not more than two lines thick, was soft and fibrous. It was not easy to distinguish it from the round and broad ligaments, as all the parts together were enveloped in a mass of cellular tissue.

The Medical Society of Toulouse was lately occupied with the case of a woman in whom also probably the uterus was wanting. The vagina here terminated in a cul de sac; the patient had never menstruated, and external examination could discover no trace of a uterus. Dr. Hohlfeld, of Berlin, has treated a similar case. The female, twenty-five years of age, had never menstruated. This was attributed to obstruction of the vagina. An operation was performed with the object of establishing a communication between the vagina and supposed uterus, but without success.—*Lancet, 9th Jan.* 1836, from *Kleinert's Repertorium, 24th Sept.* 1835.

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## PHYSIOLOGY.

4. *Professor Panizza's Experiments upon the Nerves of the Tongue, with the view of Determining their Respective Functions.*—The *London Medical Gazette* for 19th Sept. last, contains a notice of these interesting experiments, by Dr. Burrows. The memoir of the Professor of Pavia (*Richerche sperimentali sopra i*

*Nervi*) not having reached us, we take the following account of these experiments from the communication of Dr. Burrows.

The controversy which has long existed respecting the nerve which supplies the sense of taste, and various considerations which led Prof. P. to distrust all that had been advanced on the subject, determined him to discover by means of infallible facts, the function performed by each of the cerebral nerves, distributed to the tongue.

Prof. P. commenced with experiments upon the hypoglossal, and then proceeded to the lingual, and lastly to the glosso-pharyngeal. He chose the dog generally for these experiments, because this animal combines a great mobility of the tongue with an exquisite sense of taste, but he has not omitted extending his observations to other animals.

"Having muzzled and secured the legs of a dog, it was laid on the back, and an incision of the integuments made in the mesian line, in front of the os hyoides. In order to discover the hypoglossal nerve, the integuments must be detached for some distance on either side; the paniculus carnosus is then divided, and carefully removing the cellular tissue beneath, the lingual artery and hypoglossal nerve are brought into view. In this proceeding, it is desirable to keep close upon the os hyoides, by which means the nerve is reached before it passes under the mylohyoideus muscle. The nerve must be then separated from its connexion with the lingual artery, and a small portion of the nerve cut out and removed. Before the piece was cut out, and while the nerve was elevated by a probe, it was pricked with the point of the scissors, and the tongue was immediately convulsed; but the animal showed no signs of pain, neither was any pain evinced in the operation of excision.

The effect which follows the division of the hypoglossal pair of nerves is the immediate and permanent loss of all the motions of the tongue, the senses of taste and touch remaining. In fact, if a certain quantity of milk is offered to a dog after this operation, he greedily puts his nose to it, and makes those movements with his head and lower jaw which he would do to lap it up, but he does not put out his tongue to the very smallest extent; so that after many useless efforts, he abandons the attempt. There was no doubt that the milk was not touched, for the surface was never rippled, and after the experiment it was weighed, and found the same quantity as before. If a piece of bread, soaked in milk, is offered to the dog, he takes it into his mouth with eagerness, attempts to masticate it, but shortly lets it fall upon the floor, scarcely divided in halves; one of these he will take up again, subdivide it, and let them fall again; and so on until he turns away from the broken bits. In the various movements made to masticate it, if it should happen that in bending the head downwards the tip of the tongue should protrude at the angle of the mouth, it remains there flaccid, and the animal bites it, and suffers pain. One of the dogs thus submitted to experiment was so gentle, that it licked the hand upon being caressed; and after the division of the hypoglossal pair, it made the same attempts to lick the hand, but it was unable to put its tongue out of its mouth. Not only the voluntary movements of the tongue, and those which assist in mastication, are destroyed by the excision of a portion of each hypoglossal nerve, but also those motions of the tongue which contribute to the act of deglutition are also annihilated. A bolus of small pieces of bread and meat was made, and placed upon the dorsum of the dog's tongue. At first he made various movements, which showed the difficulty he experienced in moving the ball of food from the spot on which it was placed, but at the same time led to the belief that he would accomplish the mastication, and swallowing of it; but if the bolus did not happen to be displaced by its own weight, or by the motions of the lower jaw, and thus to be thrown out of the mouth, or between the tongue and the teeth, it was still found on the tongue, even after the lapse of many hours. Deglutition is not accomplished except when the ball of food reaches the cavity of the pharynx, and then by the simple action of the pharyngeal muscles; but even in this case deglutition is imperfectly performed, inasmuch as the ball of food, being compressed by these muscles, is broken to pieces, and returns in part into the mouth through the isthmus faucium, which is not closed by the paralyzed tongue. The same thing happens if water is poured into the fauces of the dog, for the purpose of giving him drink. On these accounts it costs great time and trouble to keep the dog alive.

The attempts made by the dog to displace the food from the back of the tongue, the pain he suffered upon accidentally biting it, and the endeavours he made to replace the tongue in its natural position when it was put on one side in feeding him, are all facts which prove that the dog feels his own tongue, and with it feels the contact of foreign bodies. To make more certain of this point, the tip of the tongue was pricked, and the animal gave signs of acute pain; and after a little time, a small hook was put into the middle of the tongue, with the intention of drawing the tongue forward, but the dog howled so loud, and resisted so much, that the hook was removed, from fear of tearing the tongue. When the tongue was pricked towards the base, it gave evident pain, and occasioned efforts to vomit. It is therefore quite clear that the sense of touch remains after the excision of portions of the hypoglossal nerves.

In the foregoing experiment, it was not clear whether the sense of taste was affected; for although the dog attempted to masticate a piece of meat, he might have been induced so to do by the sense of touch, or smell, or taste. To illustrate this point, a small feather, previously dipped into a solution of colocynth (which has a sour disagreeable taste, and no smell) was lightly applied to the dorsum of the dog's tongue; the animal quickly showed, by the movements of his head, by turning up his lips, and other signs indicative of disgust, how disagreeable the flavour was. A piece of bread soaked in the same solution, and put into the animal's mouth, occasioned the same marks of dislike to the taste of the colocynth. From this we may infer that the peculiar sense of the tongue is preserved after the excision of the hypoglossal nerves.

Similar experiments were performed upon sheep, with precisely identical results: the animal was no longer able to draw into the mouth, by means of the tongue, twigs, and leaves, and herbage; besides this, the bleating became harsh, and not so loud as before.

Thus then since it appears that the excision of the hypoglossal nerves immediately and entirely destroys the motions of the tongue, there can be no doubt but that this nerve is the efficient cause of those movements; and, on the other hand, as the sense of touch of the tongue and taste remains unimpaired, there can be no doubt that these functions depend upon some other sources of nervous influence.

To expose the lingual branch of the fifth pair of cerebral nerves, it is desirable to make an incision through the integuments in the mesian line, from the os hyoides nearly to the symphysis of the jaw. The integuments must then be reflected from the subjacent cutaneous muscle on either side, as far as the edge of the depressor muscle of the jaw. Then, upon dividing the cutaneous muscle, the mylohyoides is exposed; and this latter muscle must be cut through, to the extent of half or a whole inch, according to the size of the dog; when, upon turning on one side the edges of the divided muscle, the branches of the lingual nerve are brought into view. Care must now be taken to follow the course of the nerve backwards to the point where it gives off a branch which is distributed to the frænum of the tongue. After the nerve is separated from its surrounding attachments it is divided, and a portion removed to prevent reunion. The wound is then to be closed, and the edges kept together by stitches.

The effect which immediately follows this excision of a portion of each lingual nerve, is the complete annihilation of all sense of feeling in the tongue, while motion and taste both remain. In fact, it not unfrequently happens that the dog upon being set at liberty, begins to lick his nose and paws, especially if they are stained with blood.

If some milk, or bread, or meat, is offered to the dog, he eats and drinks readily, although, after the operation, it sometimes appears that the dog laps up the milk and masticates his food rather slowly, which may arise from the loss of the sense of touch, or in consequence of the deep wound. If, on the other hand, just enough colocynth, or infusion of quassia, be added to the milk, so as to give a bitter taste without altering the colour, or a piece of bread be dipped into the milk, or, indeed, merely a few drops of the bitter liquid poured between the fibres of a piece of flesh, the animal, which up to this moment had evinced the strongest desire for meat and drink, immediately refuses both one and the other after taking one mouthful of either. If a piece of meat prepared with the bitter solution is mixed with several other, and the dog accidentally take it into his mouth, he immediately rejects it, and often refuses to eat any more.

These facts alone would not prove that the sense of taste still exists in the tongue, because the bitter flavour may be perceived by other parts of the mouth. In order to dissipate all doubt, it is therefore desirable that the bitter substance should merely touch the tongue itself; and to accomplish this, it is best to take a small feather, previously slightly dipped in the bitter fluid, and to draw it lightly along the dorsum of the tongue, taking great care the fluid does not extend beyond the points touched by the feather. With these precautions the animal still evinces the same marks of strong distaste for the flavour.

Thus, then, the division of the lingual pair of nerves neither destroys the motions of the tongue, nor that peculiar sense which resides principally in that organ.

The sense of feeling is that which suffers by the above-mentioned operation; and this is clearly shewn by the indifference and absence of all suffering on the part of the animal when severe injuries are inflicted upon the tongue. Thus punctures, the cautery, deep incisions and wounds made by the animal's teeth, cause no pain. Although some slight hesitation is occasionally observed in the acts of lapping up and masticating, still the animal uses his tongue freely. Indeed it would seem that the loss of feeling ought to occasion some obstacle to the perfect accomplishment of these acts, inasmuch as a part which is no longer felt, and which itself no longer feels, cannot be freely influenced by the will. But in this case is it not probable that the peculiar sense of taste, by means of flavours, may in part supply the loss of the sense of feeling? In this case, then, it will not surprise that the loss of feeling in the tongue does not induce all the effects which it would produce in other parts.

Since, then, by the division of the two lingual branches of the fifth pair, the sense of feeling in the tongue is destroyed, these nerves preside over this sense, which corresponds with the functions of the fifth pair in all the other parts of the face. On the other hand, if the motions of the tongue and taste are preserved, these functions of the tongue do not depend on these same nerves; or, at least, they do not depend on them primarily and solely. Moreover, if the motions of the tongue and the taste were destroyed, together with the sense of feeling, by the division of the nerves of the fifth pair, it would not be a proof that these presided over those two functions, but simply that the integrity of the sense of feeling was essential to the manifestation of the other two functions. It has been already shown from what nerve really proceeds every motion of the tongue, and it will shortly be stated from whence arises the sense of taste.

There are some, however, who maintain that the sense of taste results from the combined influence of the hypo-glossal and lingual branches of the fifth pair. To disprove this opinion both these nerves were simultaneously divided in the same animal, and the tongue was immediately deprived of all motion, and of the sense of feeling, whilst the taste remained unimpaired; so that upon touching any part of the tongue, and particularly towards the base, with the solution of colocynth, the dog evinces the strongest marks of disgust. The sense of taste, then, does not depend upon the combined influence of these two nerves, but upon the remaining undivided nerve; whilst the other functions of the tongue, which do not depend upon it, were successively annihilated by the successive division of the other nerves.

Although the conclusions from the foregoing experiments would be satisfactory to some persons, still (continues Panizza) it is better to proceed to direct experiments on the glosso-pharyngeal nerves. The division of these nerves is rather a delicate than a difficult operation. Having made an incision through the integuments along the mesian line, from the thyroid cartilage to the chin, the integuments are to be separated from the panniculus carnosus, as far as the angle of the jaw, and this muscle cut through along the course of the internal margin of the depressor muscle of the jaw. The edges of these parts, and any lymphatic glands there, must be turned on one side; and thus the space which exists between the depressor muscle of the jaw and the os hyoides is exposed; and it is in the very bottom of this space, filled up by cellular tissue and many large veins, that the glosso-pharyngeal nerve must be sought just coming out from the cranium.

The cellular tissue must be removed with the greatest care, to avoid wounding

the large veins; and it greatly facilitates the operation to have the edges of the wound drawn apart, and the bottom well cleansed of blood. A few fibres of the constrictor muscle of the pharynx are to be separated, and the glosso-pharyngeal nerve is then exposed. The nerve being insulated, it is desirable to divide it near its exit from the cranium, so as to comprise all its filaments. If the nerve be pricked before it is divided, the animal neither shows any signs of pain, nor is the tongue convulsed; the same is observed in actually dividing the nerve.

The effect which ensues is the complete loss of taste, whilst the motions and the sense of feeling of the tongue remain.

As soon as the dog had a little recovered himself after the operation of the division of the glosso-pharyngeal nerves, he licked up some water, and ate as freely as if no injury had been done to him. The animal had no other guide than the sense of smell in the choice of food, so that he will equally take into his mouth disagreeable and hurtful substances as well as pleasant and wholesome. The dog after this experiment ate with equal voracity plain meat as well as that imbued with colocynth, and equally drank the plain milk and that rendered bitter by colocynth. The dog not only devoured a piece of meat which had been beaten up with some colocynth, but even lapped up the remainder of the liquid in the plate.

Similar experiments were made at the same time with a dog whose lingual nerves of the fifth pair had been divided After this latter animal had caught in his mouth several pieces of plain meat which were thrown to him, he readily took in the same manner a piece with the bitter flavour; but he had scarcely got it into his throat before he was seized with vomiting, and he rejected this piece. A most remarkable contrast between the dogs was now observed; for the animal whose glosso-pharyngeal nerves were divided, immediately ate this rejected piece of meat. Nevertheless, this latter animal still preserved the sense of feeling in the tongue; for immediately on its being pricked the dog howled, and attempted to run away.

If, then, the division of the glosso-pharyngeal nerves causes a loss of the sense of taste, there can be no doubt but that this sense depends on that nerve, to which therefore, properly belongs the title of *gustatory nerve;* and if the division of these nerves causes no impairment of the motions of the tongue, nor of the sense of feeling, it is likewise certain that these functions do not at all depend upon these glosso-pharyngeal nerves.

In fact when the glosso-pharyngeal nerve is diligently examined, either in man or animals, as in the dog upon which these experiments were principally performed, it appears that, without giving off a single filament to the muscles through which it passes, the nerve is entirely distributed to the mucous membrane of the tongue and to the surrounding parts, which, in common with the tongue, enjoy the sense of taste; this sense is most exquisite there, where the filaments of the nerve are most abundant—that is, towards the base of the tongue.

In this manner, then, having established that the gustatory functions belong to the glosso-pharyngeal nerves, it appears that many phenomena of intimate sympathy which exist between the tongue and the stomach, are in this way much more easily and directly explained than was done by assigning the sense of taste to the lingual branch of the fifth pair.

"From these experiments upon the tongue, it is at last shewn, if I do not deceive myself," says Panizza, "that each of its nerves belonging to the cerebro-spinal axis presides exclusively over one function, and that each in turn assists the other to accomplish a wonderful variety of effects. So entirely is it true, that nature, who is so complicated and varied in her operations, is most simple in the means she employs."

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5. *On the Mechanism of the Bruit de Soufflet.*—Dr. Corrigan communicated to the Medical section of the British Association, at the meeting in Dublin, a memoir on this subject. The first part of the paper consisted of an analysis of the various theories which had been proposed to account for this sound and its varieties, *bruit de rape*, &c. Laennec supposed it to be produced by spasmodic action, but his opinion has been generally abandoned. By some the sound has been attributed to increased pressure made by narrowing of the heart or arteries,—but it is

heard in permanent patency of the aorta, in the vessels of the pregnant uterus, in aneurismal dilatation of arteries in varicose tumours, in all which instances there is no narrowing;—by others to increased velocity in the motion of the blood; but it is not heard in the circulation of the fœtus or infant, while it is audible in the slower circulation of the mother; nor in the quickened pulse of hectic or inflammatory fever, while it is audible with a pulse of 70. By others it is attributed to roughnesses in the interior of arteries, or irregularities, over which the blood, in passing, produces the sound; but it is not heard in the healthy heart, the internal surface of which is exceedingly irregular; nor is it necessarily present in aneurisms, rough and irregular on their inner surface, from shape, or from deposition of fibrine; the sound, on the contrary, being frequently heard when there is no deviation from the natural state of the interior surfaces of the heart or arteries.

The second part of the paper developed Dr. Corrigan's views. His theory is, that the sound depends on the simultaneous presence of these two conditions, viz: 1st, a current-like motion of the blood (instead of its natural equable movement,) tending to produce corresponding vibrations on the sides of the cavities or arteries through which it is moving; and, 2ndly, a state of the arteries or cavities themselves by which, instead of being kept in a state of tense approximation on their contained inelastic blood (which would necessarily prevent any vibration of their sides,) they become free to vibrate to the play of the currents within on their parietes; and by those vibrations cause, on the sense of touch, "*fremissement,*" and on the sense of hearing, "*bruit de soufflet.*" It was shown that these two conditions are present in the parietes of the ventricle, and the currents of blood striking against them in cases of narrowed auriculo-ventricular openings; in the enlarged and tortuous arteries of the placental portion of the uterus permitted by their very free anastomosis with veins and sinuses, and other causes, to become partially flaccid in the intervals of the heart's contractions, and the irregular currents necessarily assumed by the blood in rushing along these comparatively flaccid tubes at their next diastole; and that similar conditions exist in the analagous state of the vessels in aneurismal dilatations of tortuous arteries. The presence of the two conditions was also applied to explain the mechanism of the sound in permanent patency of the mouth of the aorta, in the large arteries of animals dying of hæmorrhage, and in various other instances. In conclusion, two experiments were detailed, in which, in one instance, a small bladder, and in the other a portion of the gut of an animal, was interposed between two cocks, the upper or nearer being the cock of a water-cistern, and the lower or further constituting the discharging orifice of the bladder or gut, and water then allowed to flow through from the cistern. The sound "*bruit de soufflet,*" and the sensation "*fremissement,*" were perceptible in the intervening bladder or gut, until (from the upper pipe pouring in fluid faster than the lower discharged it) the bladder or gut became tense, and then both sensations ceased, the passage of the fluid through, nevertheless, continuing all the time. The experiment with the bladder was applied to explain the occasional presence and absence of "*bruit de soufflet*" in aneurisms, the sound being present in an aneurism when, from any circumstance connected with it, its parietes can become at all flaccid in the intervals of the heart's contractions,—not being heard if the parietes remain tensely applied to their contained fluid.

Dr. Corrigan has in some experiments substituted a gum-elastic tube for the portion of gut.—*Lond. & Ed. Philos. Mag.*, Dec. 1835.

6. *On the different offices of Lacteals, Lymphatics and Veins in the Function of Absorption.*—Dr. Handyside, of Edinburgh, presented to the Medical Section of the British Association, at the Dublin meeting, an interesting paper on this subject, in which, after starting with the proposition, now generally admitted, that these three set of vessels are one and all of them endowed with the faculty of absorption, he proceeds to lay down, as a general position, that each of these three systems of vessels is endowed with a peculiar office in the general function of absorption:

1st. That the lacteals absorb aliment, and refuse entrance to all other matters.

2nd. That the lymphatics remove the elements of the body which have become useless or noxious, to make room for the deposition of new matter.

3d. That the veins, besides returning the blood to the heart, absorb various foreign matters.

1st. *Function of Lacteals.*—This appears to be decidedly to convey nutriment into the system, and that no other class of vessels can exercise that function would appear almost proved to demonstration by the experiments of Dupuytren, in which it was ascertained, that by applying ligatures round the thoracic duct of horses, death from inanition followed in all instances.

2nd. *Function of Lymphatics.*—Closely as the lymphatic system resembles the lacteal, even in the most minute details of anatomical characters, the vessels composing it nevertheless appear to have for their peculiar function the office of removing the debris of the body. After noticing the arguments of Dr. Hunter and Mr. Hewson as to this function being performed by the lymphatics, Dr. H. ingeniously observed, that in vegetables the debris, instead of being removed by vessels, are detached from their surface, as in the falling off of their leaves and the scaling off of their bark, or they are piled up in the interior of the individual, (as heart wood,) and preserved during the whole period of its existence; which circumstance, taken in connexion with the absence of a system of vessels in vegetables corresponding to lymphatics, may be regarded as affording a negative proof in support of the opinion here stated.

Dr. H. next alludes to the supposed communication between the veins and lymphatics, which he maintains does not exist except where great lymphatic trunks empty themselves into the venous system; thus showing an independent existence of the lacteal system, which argues in favour of their having to perform a separate function.

3d. *Absorption by Veins.*—Several experiments were detailed, proving that the absorption of fluids from the surfaces of serous and mucous membranes, and from the surface of the skin, was accomplished by the veins and not by any other vessels. These experiments consisted in the exposure of fluids containing ferrocyanate of potass and prussiate of potass to the serous and mucous surfaces, and to the skin stripped of its cuticle. Absorption of the fluids so applied took place, and by the application of suitable tests, the sulphate and deuto-sulphate of iron, the presence of the salts above mentioned was discovered in the blood, but never in the fluid contained in the thoracic duct.

The results of these experiments were similar to those of Flandrin, Tiedemann and Gmelin, and Magendie, and prove that absorption from the surfaces of the various organs is affected by the veins.

The last point alluded to is the absorption of foreign matters from the interstices of the tissues of the body.

Having pointed out in the experiments of Magendie, Edwards, Vavasseur and Brodie, instituted with the view of proving interstitial absorption by veins, as an objection to the conclusions which these physiologists arrived at, that in every instance the substances acted upon were introduced into fresh wounds, by which they were brought into contact with the blood passing into the vessel in its course to the heart. Dr. H. suggested and performed two experiments, which he considers to be free from the objections which he urges against the experiments of the foregoing authors.

They were as follow:

*Exp.* 1. Having made a fistulous opening in the abdominal parietes of a dog, I took advantage of the period when a complete granulating surface should be formed, to apply to it very freely the solution of prussiate of potass. On killing the animal three minutes after the application, and applying the appropriate chemical test to the blood, it was shown to exhibit traces of the poison.

*Exp.* 2 was performed by applying prussiate of potass, in solution, to a granulating surface on the back of a cat, for four hours, and at the end of that period the presence of the poison was discovered by the test in the blood from the carotid arteries, but no indication whatever of its presence was observed in the lymph.

From all the reasoning advanced and experiments detailed in this paper, the author has considered it proved, that the absorption of foreign matters, occurring from the interstices and surfaces of the body, occurs solely through the channel of the venous system.—*Dublin Journ. Med. and Chem. Science, Sept.* 1835.

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7. *On the Motions and Sounds of the Heart.*—The following interesting report

respecting the successive motions of the different parts of the heart, and the sounds that accompany them, was made to the Medical Section of the British Association, at their meeting in Dublin.

"The committee having met several times, and having considered the different opinions hitherto advanced on the subject of the motions and sounds of the heart, proceeded to institute a series of experiments, the subjects of which were generally young calves; in which animals the heart is sufficiently large to admit of the motions and sounds being accurately observed, while their early age is favourable to the prolongation of the experiment, as it has been ascertained that the vitality of the different organs is more enduring, and less influenced by injuries to the individual, in animals at a very early age, than in those of a maturer growth. The pulse varied in the subjects for experiment from 76 to 80.

"The animals were prepared in the following manner:—a tube connected with a pair of bellows was inserted into the trachea, and the sensibility of the animals having been destroyed by a blow on the forehead, artificial respiration was commenced, by means of which the heart was enabled to continue its pulsations for a period varying in different subjects from one hour to two. The committee had been disappointed in their endeavours to procure some of the woorara poison, which has been used in similar experiments in London; and found, that the employment of prussic acid, in a quantity sufficient to suspend the sensibility of the animal, destroyed, in a few minutes, the power of motion in the heart.

"Section I.—*Experiments on the Motions of the Heart.*

*Exp.* 1. A calf, two days old, having been secured on its back, and prepared as above described, the sternum and a portion of the ribs on both sides were removed, when the following motions were observed. The heart was beating strongly, at the rate of 144 pulsations in the minute, but in a short time fell to 80. While still enclosed in the pericardium, the heart was observed to have a slight vibratory motion on its longitudinal axis, which motion, it may here be remarked, may assist in explaining the phenomenon of *frottement* in disease. On cutting open the pericardium, and turning it aside, both the auricular appendices were seen to project with a rapid motion upwards, or towards the place of the sternum, and immediately afterwards to recede. When coming forwards, they were swollen and soft to the touch; when receding they became hard to the touch, were diminished in size, and flattened. Immediately after the recession of the auricular appendices, the ventricles with a rapid motion assumed a somewhat globular form in their middle part, which projected towards their sternum, and their apex at the same time was pushed considerably in the same direction. During their continuance in this state, the ventricles were hard to the touch, and if grasped by the hand, at the commencement of the movement, they communicated a shock or impulse, and separated the fingers. When the ventricles had remained for a short time in the state just described, they suddenly sank downwards or towards the spine, and became elongated, broad and flat, and soft to the touch.

"This succession of motions having been observed for some time, a small glass tube was introduced through a puncture into the left auricular appendix, and the blood was seen to rise in the tube during the recession of the appendix, and to subside during its upward movement. A similar tube was introduced through a puncture in the right ventricle, and a jet of dark coloured blood was thrown forth during the globular and hardened state of the ventricles, and subsided when they became flattened and soft. A puncture was made in the pulmonary artery, close to the ventricle from which it arises, and through it a stream of blood issued synchronously with the jet from the tube in the right ventricle. A tube having been introduced through a puncture in the left ventricle, and one of the mesenteric arteries having been exposed and opened, the jet from the ventricles was observed to precede the jet from the arteries, by an interval easily appreciable. The femoral artery was opened, and a similar observation was made as to the interval between the jet from the left ventricle and the jet from that artery. Previously to opening the chest, the committee had satisfied themselves, that the beat of the heart, felt through the sternum and cartilages of the ribs, preceded the pulse, felt in arteries at different distances from the heart, by intervals of time which were proportioned to those distances: and they were also satisfied, that the jets of blood from the mesenteric and femoral arteries were synchronous with the pulses felt in those arteries.

"*Exp.* 2. In a calf, prepared as the former had been, and placed on its right side, a portion of the ribs on the left side was removed, the sternum and part of the cartilages on that side being left in their natural position, and the pericardium was opened. It was now seen that when the ventricles assumed their hardened state, their apex, and a considerable portion of their anterior surface were closely applied to the sternum, and when the hand was interposed between the latter and the surface of the ventricles, a strong compression was exercised on the fingers during each approach of the ventricles to the front of the chest. When the ventricles were in their softened state, their anterior surface, by which is meant the one corresponding to that called anterior in the human heart, was sometimes in contact with the sternum, and sometimes removed to a little distance from it, and from the contemplation of this, and the preceding experiment, the committee were satisfied, that the situation of the heart in the thorax is affected by the position of the body, as has been observed by others; for instance, that in the recumbent state, on the back, the heart recedes somewhat from the sternum: if the individual lie upon the face, the anterior surface of the ventricles is in constant apposition with the front of the chest, the pericardium of course being interposed. The yielding texture of the lungs, and the mode of attachment of the pericardium and the great vessels, are such, as to allow the gravitation of the heart to influence its position in different postures of the body. These experiments were repeated on different subjects, and the observations recorded above were confirmed.

*Exp.* 3. A rabbit was stunned, and its heart immediately taken out of the body and placed on the hand, with the anterior surface of the ventricles upwards. The ventricles continued to beat for some time, and assumed alternately the forms which have been described in the first experiment. During the continuance of the globular form, the body of the ventricles was protruded upwards, and their apex was considerably elevated from the hand: and while in this state, it was ascertained by measurement, with a pair of compasses, that the length and the breadth of the ventricles were diminished. On the collapse, or softened state of the ventricles, taking place, they became longer and flatter, and their apex sank towards the hand. The heart was now placed with the posterior surface of the ventricles upwards, and the globular swelling, in their middle part, was observed to alternate with the flattened form on this surface also; but the apex was not elevated as in the preceding part of the experiment.

"*Exp.* 4. The sternum of a frog having been removed, the following appearances were observed. The ventricle having become swollen, soft and red-coloured, sank and diminished in size, and became pale and hard; alternating in these qualities with similar qualities in the auricle. It was manifest from the colour of both ventricle and auricle in their swollen state, that they were then full of blood; and from their softness, that they were in their diastole.—When they became pale and diminished in size, they were in their systole. During the diastole of the ventricle, its anterior surface was protuberant and approached the sternum, while its apex drooped towards the spine. In its systole, the anterior surface receded from the sternum, and its apex was slightly turned upwards or towards the sternum. The finger being applied to the ventricle during its systole, a slight shock or impulse was felt. In this experiment the relations between the sternum and the ventricle, during the diastole and systole of the latter, are nearly the reverse of those observed in the hearts of quadrupeds in the foregoing experiments. In these the ventricles approach the sternum, during the hardened state or systole, and recede from it in the softened state or diastole. This difference depends on the dissimilarity of the heart in warm and cold-blooded animals, and will be adverted to again.

"Section II.—*On the Sounds of the Heart.*

"*Exp.* 5. A stethoscope was applied on the sternum, over the heart, in a calf in which artificial respiration had been established, and both sounds of the heart were distinctly heard; the first prolonged and dull, the second abrupt and clear. The sternum and ribs were removed, so that the heart beat free from the contact of any part of the thorax, and a stethoscope, connected with a flexible tube and ear-piece, having been placed on the pericardium, over the ventricles, both sounds were distinctly heard. In the experiments on the sounds of the heart, with the sternum removed, the flexible ear-tube was found to be serviceable in preventing the transmission of the shock or impulse, which was felt when the common stetho-

scope was used, and which embarrassed the observation. The ear was now applied very near to, but not touching the heart, and both sounds were distinguishable, but feeble. A small piece of board was placed over the surface of the ventricles, and kept in contact with the pericardium, and the common stethoscope having been applied to the surface of the board, both sounds were heard as distinctly, and very nearly as strongly, as when heard through the sternum. The ear-tube was placed on the ventricles, near their apex, and in this condition, the first sound was very distinctly heard; the second sound indistinctly. When the tube was placed over the origins of the large arteries, both sounds were heard distinctly, particularly the second sound. The pericardium was distended with tepid water, and in that state, both sounds were heard, but not so clearly as before the injection of the water.

"*Exp.* 6. In a calf, prepared as before, the sternum and ribs having been removed as in the last experiment, and the pericardium having been cut away, both sounds were listened to with the ear-tube applied to the different parts of the ventricles, with the same result as in the last experiment. The great arteries were compressed close to the heart, and the character of the second sound was altered; and at times it seemed to some of the committee that the second sound was lost, the first sound remaining unchanged. A fine curved needle was passed into the aorta, and another into the pulmonary artery, beneath the line of attachment of one of the semilunar valves in each vessel, and the needles were passed about half an inch upwards, and out again through the respective vessels, so as to confine a valve in each, between the needle and the side of the artery: upon applying the ear-tube over the origins of the arteries, it was found that the second sound had ceased, and that a sound resembling the first in character, and coinciding with the systole of the ventricle, was still audible. Some of the members of the committee thought that the sound just mentioned was prolonged beyond the usual duration of the first sound, as heard before the introduction of the needles; and towards the termination of the experiment, it was observed by some of the committee, that there seemed to be a repetition of the first sound, or two prolonged sounds similar in character, and which might be called rushing sounds.

"When the heart was removed from the body, and the semilunar valves examined, it was found that one valve in each artery had been confined against the side of the vessel, so as completely to prevent its descent. It may be remarked, that this operation may be performed with great ease, and almost with certainty of success.

"*Exp.* 7. The foregoing experiment was repeated on another calf, and with the same result, the cessation of the second sound. During the experiment, the second sound, somewhat modified, was heard to recur; and upon examination it was found, that the needle, which had been passed into the aorta, had slipped out. On its being replaced, the second sound again ceased. On taking out this heart also, the valves were found to have been confined, as stated in the last experiment.

"*Exp.* 8. A calf having been stunned, the heart was taken out immediately, and placed on the table. The ear-tube was applied to the surface of the ventricles whilst they were still beating, and at each systole a sound was heard resembling that called the first sound; no second sound was audible. When the heart had ceased to beat, the semilunar valves were destroyed, the ventricles were filled with water, and the heart being held upright, the ear-tube applied to the ventricles, and these compressed by the hand, so as to cause a rush of water through the arterial trunks, a sound resembling the first sound was heard; also, when the grasp of the hand was suddenly relaxed, a sound was heard of the same character as the preceding. The ear-tube having been applied to the ventricles in the dead empty heart, and their internal surfaces being caused to rub against each other, a sound somewhat resembling the first sound was heard. The finger having been introduced into the left ventricle through the auriculo-ventricular opening, and gently rubbed against the internal surface, a sound was produced resembling the first sound, and heard by the ear-tube applied externally to the ventricles. A glass tube, allowed to drop from a small height on the semilunar valves of the aorta, before they had been destroyed, caused a sound having the character of the second sound; and when the tube was introduced between the valves, and gently rubbed up and down, a sound resembling the *bruit de râpe* was heard.

"Section III.—*The successive Motion of the different Parts of the Heart.*

"From the experiments on the motions of the heart, the following conclusions may be drawn: 1. In the heart of warm-blooded animals, the systole of the ventricles follows immediately the systole of the auricular appendices. 2. During the systole of the ventricles, the auricles are distended by blood from the venous trunks. 3. When their systole has ended, the ventricles becomes relaxed and flaccid; and blood passes rapidly, but not with force, from the auricles into their cavities. 4. The auricles are never emptied of their blood, and contract but little on their contents, an active contraction being observable only in their appendices. 5. If the interval between two successive beats of the heart be regarded as divided into four equal parts, two of these parts may be allotted to the duration of the ventricular systole; something less than one to the interval between the termination of the ventricular systole, and the beginning of the diastole of the appendices, during which interval little motion is observed in the auricles; and the remainder to the diastole and systole of the auricular appendices. 6. The ventricles, in their systole, approach the front of the thorax; and by their contact and pressure against it produce the impulse or beat of the heart. 7. The beat of the heart and the pulse in the arteries are synchronous, only, when the pulse is felt in arteries close to the heart: in those at a distance, the pulses are later than the beat of the heart, by intervals of time proportioned to the distances.

"In the heart of the frog, which was examined in the fourth experiment, the ventricles swelled, and approached the sternum in its diastole, and receded from it in its systole. This difference between the movements of the heart in that animal, and in the other subjects of experiment, may be explained by considering, that in the heart of the latter the swelling of the ventricles, during systole, is produced by the thickening of their muscular fibres, which are then in a state of contraction; and of which the mass bears a large proportion to the size of the internal cavities, while in the heart of the frog, the sides of the ventricle are thin, and the cavity is large, and the increase of thickness of the sides of the ventricle caused by the contraction of their fibres, is more than counterbalanced by the diminution of volume of the ventricle attendant on the expulsion of its contents.

"Section IV.

"From the experiments on the sounds of the heart, it appears to follow: 1. That the sounds are not produced by the contact of the ventricles with the sternum or ribs, but are caused by motions within the heart and its vessels. 2. That the sternum and front of the thorax, by their contact with the ventricles, increase the audibleness of the sounds. 3. That the first sound is connected with the ventricular systole, and coincides with it in duration. 4. That the cause of the first sound is one which begins and ends with the ventricular systole, and is in constant operation during the continuance of that systole. 5. That it does not depend on the closing of the auriculo-ventricular valves at the commencement of the systole, because such movement of the valves takes place only at the commencement of the systole, and is of much shorter duration than the systole. 6. That it is not produced by the friction of the internal surfaces of the ventricles against each other, as such friction cannot exist until the blood has been expelled from the ventricles, whereas the first sound commences with the beginning of the ventricular systole. 7. That it is produced either by the rapid passage of the blood over the irregular internal surfaces of the ventricles on its way towards the mouths of the arteries, or by the *bruit masculaire* of the ventricles, or probably by both these causes. 8. That the second sound coincides with the termination of the ventricular systole, and requires for its production the integrity of the semilunar valves of the aorta and pulmonary artery, and seems to be caused by the sudden check given by the action of these valves to the motion of the columns of blood driven towards the heart after each ventricular systole by the elasticity of the arterial trunks.

"The Committee wish, in concluding this report, to express their opinion, that although much light has been thrown on the subject of the motions and sounds of the heart, by recent investigations, here and elsewhere, the nature of the inquiry is such as renders it difficult in many instances to arrive at satisfactory conclusions. They also think that the subject, from its importance, whether in a practical view, or as an object of philosophical inquiry, is deserving of further investigation.—*Dublin Journal of Med. and Chem. Science, Sept.* 1835.

8. *On the Differential Pulse.*—Dr. M'Donnell laid before the Medical Section at the meeting in Edinburgh, some curious observations on what he calls the Differential Pulse, and at the meeting in Dublin he presented some further remarks on the same subject. Dr. M'Donnell finds that in lying, sitting, or standing, there are three distinct numbers in the pulse, any one of which being given, the rest may be discovered by inference. This variation amounts generally to twelve, fourteen, or sixteen beats per minute, as its normal state, and therefore, that all observations of the number of the pulse, which have been made without reference to this principle, must be considered as nugatory, unless it be implied that the person was in the *horizontal position* when the observation was made. This rule for reducing the number of the pulse to a regular standard applies to health, but not precisely to disease; the effects of posture must be investigated separately in each disease.

The *differential pulse* appears to be confined to man. It is not observed in brutes, probably because, from their form, their posture may be considered as always horizontal; but when placed erect this peculiarity appears also in them.

The variation, in the human species, is at its maximum in tall and feeble subjects, particularly in convalescents from typhus; the minimum is generally found in children. These facts lead to the supposition, that this phenomenon is connected with some hydrostatic law, and not depending entirely on vitality. This, however, is merely thrown out as a conjecture, and requires further investigation. But in whatever manner it may be considered, it is plain that in all attempts to ascertain the effects of remedies, as well as of natural causes, due allowance must be made for these fixed differences produced by posture. What avails it to say that a medicine, or venesection, or heat, or cold, or a thousand other natural causes, raise or depress the pulse by four, six, or eight beats per minute, when the mere change of posture would raise or depress it twelve, fourteen, or sixteen per minute, and this merely in health, for in disease the differential pulse is often double this proportion.

In tracing the connexion between the pulse and respiration in man and quadrupeds, he finds that it ranges in health from four to six pulses for one respiration. This he considers a new and material fact; for if it be established by further observation, that this is a general law, we shall be able to infer the pulse from the respiration, and *vice versâ*. This may be of advantage in enabling us to ascertain the number of the pulse in ferocious animals which we dare not touch, as well as in man during action or progression.

There is a coincidence between the number of pulses and steps in walking, at the common rate of progression in man, that is very remarkable, and has not been hitherto noticed. His breathings are also singularly proportioned to his steps, so that it is easy to deduce these numbers from each other. But in hard labour or violent muscular exertion, as in running or ascending heights, the proportions are greatly altered. The same thing occurs in many forms of disease. There is reason to believe that the carbonization of the respired air has a great influence in all those cases where the number of respirations is greatly disturbed.

Dr. M'Donnell finds that the number of respirations, and by inference the number of pulses, are much the same in passing over the same space, whether we run or walk, i. e. they depend as much upon the space traversed as on the time. Thus he finds, if he walks 1000 yards in ten minutes or in eight, or runs over it in five minutes, the number of breathings are nearly the same. It is to be observed, however, that this rule does not apply to small portions of space, such as fifty or 100 yards. These facts, he thinks, are all complicated with carbonization and muscular motion, so as to require separate investigations.

In quadrupeds, especially when trotting or cantering, he has found that the steps, divided by the respirations, never give any fraction in the quotient, i. e. that these are universally proportional without any deviation. In man this does not occur, a circumstance which may arise from some peculiar anatomical or physical law in the connexion between the respiratory and muscular construction of these animals.

Dr. M'Donnell next referred to three errors observable in a work on consumption, published by Dr. Sanders, in 1808, first as to his claim to priority in noticing the differential pulse; secondly, as to his explanation of its cause; and thirdly, as to his idea that the amount of the differential pulse is always directly proportioned

to the natural or standard velocity of the pulse. It is true, when we rise erect from the horizontal position, a greater number of muscles are brought into action, but this has nothing to do with the phenomenon in question. He had proved this by placing different persons in an apparatus, so constructed that the body could be placed in all postures without any muscular motion, and he found that the differential pulse followed all the angles of elevation exactly, and this even in persons when asleep. But when the body is inverted, with the head lowered and the feet raised, this rule does not hold good. This part of the subject he proposes to follow at a future opportunity.

Dr. M'Donnell next referred to exceptions to the doctrine of the differential pulse made by his friend Mr. Travers Blackley of Dublin. He had himself met with persons apparently in health in whom there was little or no differential pulse, but from some recent observations he is inclined to think that some of these exceptions may have arisen from disease of the heart or great arteries. He had certainly found the maximum of the differential pulse in aneurisms of the descending aorta, in three or four cases of which the pulse doubled on rising erect. Nevertheless it was fair to acknowledge that Mr. T. Blackley had found the most permanent or stationary pulses in cases of organic lesion of the heart. These facts, though apparently contradictory, may both be true, and may tend to establish a just explanation when they are more numerous and more perfectly understood.

The greater number of these observations occurred to Dr. M'Donnell before he became acquainted with the writings of Laennec. Although Laennec's discoveries have given a new turn to the subject, and created a more lively interest about the sounds of the heart, yet it gives a greater value to the foregoing facts as far as they are substantiated. One thing invariably occurred, that, in proportion as the pulse was accelerated or retarded, by change of posture, its strength and fulness were affected in an inverse ratio. He thought that an attention to this circumstance might probably assist in forming a more just measure of the strength and fulness of the pulse than any hitherto known, but puts this forward merely as a conjecture.

While engaged in these inquiries about thirty years since, he had found that the pulse in the arteries of the fœtus, before it breathed, was *slower* than in those of the mother. He had found also, that if the child, when born, remained for some time without breathing, the pulse continued slow during that interval, and became accelerated only at the instant it took in its first breath. This fact appearing to him new, he had investigated the circumstance in the cow, and finding the phenomena similar, he had communicated his observations to Dr. Clarke, Dr. Labatt, Dr. Stokes, and Dr. Douglas in Dublin, none of whom had ever noticed it in any author. Dr. Jefferay mentioned it in his lectures, and in his "Observations on the Heart and on the Peculiarities of the Fœtus," and thought it might hold true of quadrupeds, and perhaps of all warm-blooded animals. He thought it probable that the fœtus before respiration was in the condition of a cold-blooded animal, and partook of that slowness of the pulse which characterizes the tribe. There is in the present state of our knowledge great difficulty in reconciling the slow pulse in the arteries of the fœtus with the rapidity of the sounds as heard by the stethoscope. How are we to reconcile such contradictory facts, as that 150 strokes or more should be heard by the stethoscope, while the pulse of the child is only 50 or 60? Supposing both these points established by observation, he would submit the following hypothesis in explanation, viz. that although there are but two sounds of the heart heard for every pulsation of an artery in the adult, it does not follow that the same ratio should exist in the fœtus. While the foramen ovale remains open and in the full performance of its office, it is plain that the two auricles cannot contract simultaneously; because in that case the blood could not be freely transmitted, the one driving it forward, the other backward at the same instant. Therefore, until nature closes that aperture, the right auricle must contract first, and the left immediately afterwards, while the ventricles will contract in unison as they do in the adult. Hence it happens, (if this hypothesis be true,) that instead of having two sounds of the heart for every arterial pulse, we shall have three or four.

I am aware, that it has been asserted, that neither of the sounds of the heart are produced by the auricles; but it does not follow that if this be true of the

adult, that it should be true of the fœtus, whose circulation is different. Besides, it has not been asserted by any one, that the pulse of the fœtus is slow or quick, but merely that the sounds of the heart are more numerous than in the adult. This matter, however, must be decided by future investigations.

It may appear surprising, how the sounds of the fœtal heart can be transmitted through the liquor amnii, and through the parietes of the uterus and abdomen in the mother, so as to become distinctly audible; but the following simple experiment will serve to explain it. Suspend a watch in a vessel containing many gallons of water, and on applying your ear to any part of the circumference of the vessel, you will hear the beats more distinctly than in the air. The same thing occurs when several folds of cloth are passed round the vessel. Dr. M'Donnell thought this was an argument in favour of the possibility of hearing the sounds of the auricles in the fœtal heart, though they could not be heard in that of the adult.

When the pulse is felt in the funis of a new born child, its strength and fulness appears to be equal to that of the larger arteries in the adult? Whence arises this impulse? While the ductus arteriosus is still open, the blood of both ventricles is driven at one stroke into the descending aorta; whereas in the adult, the blood passing through the descending aorta, merely receives the impulse of the left ventricle. Before respiration takes place, the vessels of the cord pulsate with great force, but as soon as the child breathes, they shrink rapidly and become pale and flat. Now all this occurs when you raise the fœtus and the cord above the level of the placenta. This happens whether the placenta be attached or not, whether the cord pulsates or not, and finally, after the arteries have been tied leaving the vein free.

Dr. M'Donnell concluded his paper with an account of several experiments made in descending twenty-six feet in a diving-bell; the result being that no change whatsoever was observed in the number of the pulse or breathing under all the variable degrees of pressure; but that the carbonization upon every volume of the expired air decreased and increased accordingly as he descended or ascended. Hence he infers that man and all such animals can live, if supplied with pure air, under all degrees of increased pressure, and also at all heights, until the quantity of oxygen in the atmosphere becomes incapable of decarbonating their blood.—*Ibid.*

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9. *Gastric Juice.*—The experiments of Dr. Prout, and of Tiedemann and Gmelin in reference to the gastric juice, are confirmed by those of Braconnot, and prove that there is no peculiar substance to which this appellation should be applied, but that the remarkable peculiarity of the stomach is the property which it possesses of secreting a great quantity of muriatic acid. The gastric juice examined by Braconnot was obtained from a dog. He found it to contain.

1. Free muriatic acid in great abundance. 2. Muriate of ammonia. 3. Chloride of sodium in very great quantity. 4. Chloride of calcium. 5. A trace of chloride of potassium. 6. Chloride of iron. 7. Chloride of magnesium. 8. Colourless oil with an acid taste. 9. Animal matter soluble in water and alcohol, in very considerable quantity. 10. Animal matter soluble in weak acids. 11. Animal matter soluble in water, and insoluble in alcohol (salivary matter of Gmelin.) 12. Mucus. 13. Phosphate of lime. He found no trace of lactic acid.—*Records of General Science, Jan.* 1836, from *Annales de Chimie*, lix.

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## PATHOLOGY.

10. *On the condition of the Vital Powers in Arteries leading to the inflamed parts.*—Dr. Alison communicated to the Medical section of the British Association, at the late meeting in Dublin, some experiments on this subject, in continuation of those read to the section in 1834.—(See preceding vol. of this Journal, p. 183.) He detailed the result of two examinations of the arteries of limbs of horses killed on account of injury and inflammation of single joints, in one case of three weeks', in the other of eight days' standing. The power of contracting on a distending force, and expelling their contents, was tried in the arteries both of the inflamed

and the sound limbs, by the same contrivance as was used by Poiseuille to compare the contractile power of living and dead arteries; *i. e.* by using bent tubes and stopcocks in such a way as to distend a given portion of artery (first of the one limb and then of the other,) by water pressed into it by a firm weight of mercury, and then allowing the artery to expel the distending water, and getting a measure of the force which it exerts in doing so, by the rise of the level of water in a tube communicating with the artery. The result was in both cases in accordance with the observations formerly made, that the artery of the inflamed limb exerted *less* power of contracting on, and expelling its contents, than that of the sound limb. The difference was as 10 to 16 in one case, and as 125 to 175 in the other, which was the more satisfactory of the two, as the experiment was made more immediately after death.

It appeared also, on careful comparative examination, that the contraction of the emptied arteries at the moment of death (which is the measure adopted by Parry of the vital power of arteries) was less in the diseased than in the sound limbs; the difference between the contracted state immediately after death, and the subsequently dilated and dead state of the artery (28 hours after death,) being ¼th in the case of the diseased limb, and ⅓d in that of the sound limb.

It appears, therefore, that in all arteries of such size as to admit of measurement, and which supply inflamed parts, the only vital powers of contraction, which experiments authorize our ascribing to the coats of these vessels, is *diminished* during inflammation; and it may be safely added, that no other change but this diminution or relaxation of contractile power has ever been perceived, either in them, or in the smaller vessels which come under the observation of the microscope, at least during the greater part, and in the highest intensity, of inflammation.

But if it be inferred from these facts that inflammation consists merely in relaxation of vessels, giving an increased effect to the impulse of blood from the heart to the part affected, several facts may be stated to show that the explanation thus afforded is quite inadequate. The change which takes place on the movement of the blood flowing to an inflamed part is, diminution of velocity or absolute stagnation in the vessels most affected, combined with increased velocity and increased transmission in all the neighbouring vessels; and it seems impossible to ascribe both these opposite effects to the same cause, viz: a simple relaxation or loss of power in the vessels concerned. Neither can the characteristic effusions consequent on inflammation, and by which alone it is uniformly distinguishable from simple congestion or serous effusion, (and particularly the increased quantity and increased aggregation of the fibrin that exudes from inflamed vessels,) be explained by this change of the action of the vessels. And further, the local causes which excite inflammation are not only such as in other instances produce an increase, instead of a diminution, of vital power, but they are such as have been ascertained to produce, when they are made to act on minute portions of individual vessels only, contraction instead of relaxation; as has appeared in the experiments of Verschuir, Thomson, Hastings, Wedmeyer, and others.

The proper inference, therefore, appears to be, that the idea of an *increased action of vessels* in an inflamed part is indeed a delusion; but that there is a really *increased action within the vessels* of the part, *i. e.* an increased exertion of powers, by which the motion of the blood is affected, but the action of which is independent of the contractions of the living solids, and the effect of which is to cause distention and relaxation of the vessels, within which they act with unusual energy.—*Lond. & Ed. Philos. Mag.*, Dec. 1835.

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11. *On the immediate cause of Death by Asphyxia.*—Dr. Alison communicated at the same time some experiments on death by asphyxia, the immediate object of which was to ascertain whether the acceleration of the flowing blood through the lungs,—which is undoubtedly produced by respiration, and the failure of which appears, from the experiments of Williams of Liverpool, and of Kay of Manchester, to be the immediate cause of death by asphyxia, can be ascribed, as Haller and some very recent authors have supposed, to the merely mechanical influence of the alternate expansion and contraction of the lungs by the respiratory movements.

That this is not the fact might be concluded from the fatal asphyxia produced

by breathing azote or other gases, not poisonous, but not containing oxygen; in which case it had been observed by Broughton and others, that the stagnation of blood in the lungs, and the distention of the right side of the heart, take place equally as when the respiratory movements are suspended. But to this observation it might be objected, that the animals on which experiment had been made had been allowed to remain in the azote until they became insensible, and their respiration of course ceased, and had not been examined until some minutes after their apparent death, and it might be said, that the right side of the heart had become congested only after the acts of respiration had ceased, and in consequence of their cessation.

In order to avoid this source of fallacy, several rabbits were confined in azote, only until their breathing became laboured, the respirations generally less frequent, but much longer and fuller than natural. They were then taken out and instantly struck on the head with such force as to crush the brain and cerebellum, and arrest the circulation as instantaneously as possible. This was always attended with violent and general convulsion, but with no attempt at respiration, sensation being apparently instantaneously suppressed. When the body was opened immediately after the convulsion had subsided, the right side of the heart was always found distended with blood, and palpitating feebly; the left side at rest and comparatively empty: the quantity of blood obtained by puncturing and pressing the right side and pulmonary artery was from 5 to 10 times as much as could be obtained from the left side and aorta. When a rabbit previously breathing naturally was killed in the same manner, the quantity of blood on the right side of the heart (apparently accumulating there during the convulsions) was found to be greater than on the left; but the difference was decidedly less than when it had been breathing azote; and in one of these comparative trials the blood in the left side was found to be sufficient to keep up a feeble palpitation in that side, whereas in the animals that had breathed azote the left side was always found quite at rest.

It appears from these experiments that when oxygen is not admitted into the lungs in inspiration, even although the respiratory movements continued further and more forcible than usual up to the moment of death, the blood stagnates on the right side of the heart; and that the application of oxygen to the blood at the lungs, is a cause of acceleration of its movement through the lungs, independently of any influence of the mechanical movements of respiration.

If we further inquire, in what manner oxygen can give this stimulus to the flowing blood through the lungs, it appears certain that it cannot be by stimulating the small capillaries of the lungs (the only vessels to which it is directly applied) to contraction, because even if it be granted that there are vessels capable of contracting on irritation (which is very doubtful, the immediate effect of stimulating any arteries capable of taking on such action has always been observed to be a constriction permanent for some length of time, and in consequence a *retarded* flow of the fluids through them, as in the experiments of Wedmeyer.

If, again, we suppose the effect of the oxygen on the minute vessels in the lungs to be sedative or relaxing, and ascribe to a diminished action of these vessels the apparently increased efficiency of the right side of the heart when oxygen is applied, we suppose the oxygen to produce the very opposite effect to that which has always been observed when it or any other stimulus has taken effect on any individual artery.

The only mode in which it appears possible to escape from these difficulties is to suppose that the stimulus given by the oxygen to the flowing blood through the lungs, is a stimulus to that movement which is independent of any contraction of the solids containing the blood. This conclusion is in perfect accordance with the observations of Haller on the *derivation* of blood, perceptible under the microscope, towards any part where an opening is made in a vessel, and air admitted into contact with the blood, because he gives satisfactory reasons for thinking that this derivation is not owing to contraction of the vessels; it is also in accordance with observations on some of the lowest tribes of animals, and on vegetables, where *currents in fluids* are observed in connexion with the act of respiration, but no movement in solids has been detected; and even, as Dr. Alison thinks, with the observations of Purkinje and others, on currents connected with the respiratory organs in animals much higher in the scale, because although these last currents

have been ascribed by most authors to vibrations of ciliæ, which are seen to accompany them in various instances, it seems very doubtful whether they can be adequately explained without supposing a "*jeu d'attraction et repulsion*" to be commenced in these instances, as well as in the respiration of the lowest tribes.—*Ib.*

12. *Case of Aural Illusion.*—Our cotemporary, the *Jamaica Physical Journal*, (Sept. and Oct. 1835,) contains the following interesting case of aural illusion, communicated by Dr. Ferguson. "A gentleman who had lived for many years in the West Indies, and had enjoyed good health—of robust frame, and of the sanguine temperament, came to me and asked if I had ever, in my practice, met with any individual who was tormented by a voice constantly speaking in or near to the ear. I replied, that illusions of the sense of sight were more common, and that I had often met with such, but that the ear was liable to the same derangement as the eye in this respect; and that illusions of the ear had occurred to others, though I did not recollect any case that had come under my *own* immediate notice. With a smile, but with some solemnity in his voice, he then observed that he had thought the second sight of his native land had been given to him, and that some evil was about to befall him, for that during the three preceding nights, a voice which he described to be soft like that of a female, and which he admitted he well knew, was constantly speaking to him; sometimes he said this voice addressed him in words of kindness, but generally in the language of reproach, or of the most fearful denouncing. On requesting him to repeat some of the words addressed to him by this unwelcome visiter, he told me he had been much tormented and distressed by the following conversation:—Where will you be to-morrow?—In your grave. And where then? And the same voice, in unmeasured terms, immediately condemned him to the abode of sinners. He declared he was wide awake—indeed, that he was sometimes walking through the room when he heard the voice. If my patient himself, for such I now considered him, asked a question, it would appear to be immediately answered by the same voice; or if no questions were asked, both questions and answers would proceed from one source. Thus, though the thoughts were only passing in his own mind, yet they appeared to come from without, and to reach the mind by impressions made on the ear. It is not to be wondered at, that the singular situation in which this patient was placed, should have caused him considerable doubt and alarm, and that he anticipated with horror a recurrence of the mysterious visitation when night should again seclude him from society. On enquiring if the voice was only heard at night, he said he heard it constantly—"now at this moment;" but that it became more awful and distinct in the stillness of night.

I had long known this patient. I had been in the habit of meeting him frequently, and of conversing with him, and I had never imagined even there was the slightest aberration of mind; on the contrary, I had often occasion to observe and estimate his good common sense. On speaking further with him, and observing his expression, manner, and deportment, I felt satisfied that he had not only all his wits about him, but that his mind was well formed to counteract the feeling of alarm engendered by the false perceptions of his ear, when the nature of his affection should be explained to him. I then proceeded to tell him that in some individuals, when any slight disorder took place in the brain, such as irregularity in the circulation in this organ, the mind appeared to acquire a power of impressing the retina or sense of sight with images as vivid as the realities—that I had no doubt his ear was similarly situated, and by correcting the state of the circulation in the brain, that the illusory sounds which he complained of would disappear, and that in the mean time he should keep this explanation present to his mind to ward off the dread or the belief of a supernatural interference. He appeared to be much relieved by this conversation, and he left me to resume his business. In the afternoon he took ten grains of Pilulæ Hydrargyri, and during the night he was tormented as before, and had no sleep; but in consequence of the explanation I had given him, he had been free from alarm, and had even ventured to jest with his apparition voice.

Next morning he was cupped between the shoulders, which produced some faintness and paleness of the face, which was before much flushed. All night he again took the Pilulæ Hydrargyri, combined with the compound extract of Colocynth, and a draught with twenty-five drops of the solution of the Acetate of

Morphia. He slept at night without dreams or disturbance from the voice. He was awakened by a friend going to his bedside in the morning, to whom he said he felt much better, and at that instant the voice was again heard, dooming him, as it had done before, to the abode prepared for the wicked. "You will be in hell again to-night," with a tormenting emphasis and long intonations, were the words which impressed the ear. When I called, he told me of the boast he had made to his friend, and the salutation which followed from his tormentor, and he declared that at this moment the words were constantly being repeated. I asked him frequently if the sound was any thing like the sensation, if I may so speak, of the remembrance of a sound, and he always declared it was not, but as distinct as a real sound. It was low and soft, and he imitated the voice as nearly as he could that I might have a better idea of it. As a proof of its distinctness, I may mention that when the patient was on some occasion sitting in a position which he could not at the moment change, he asked me if there was any one whispering behind him. It appeared also that the loudest sounds from without, such as the rattling of carriages immediately behind him, had no effect in diminishing its intensity. At times it appeared to whisper, but generally assumed a soft speaking tone. The "burden of the song" seemed to be the death of the patient, and his death was several times predicted to take place at a certain hour, and before he had learnt to repose his confidence in my view of his case, he had felt much uneasiness till the appointed hour was past. At other times the voice appeared to echo or repeat many times over the last words of any observation made by those conversing with the patient; or, words would appear to be uttered which plainly took their origin in some association of ideas, which he could trace from the suggesting idea to the one which became impressed as a sound on the ear. While being cupped on the back, for instance, the flame and scarifications were associated with branding, and the attendant voice appeared immediately to say, 'you are branded for hell,' with many repetitions and prolonged intonations of the last word.

"In the evening, finding that he was little relieved from these strange illusory sounds, I directed him to take ten grains of calomel at bed-time, and to purge it off with some castor oil in the morning. He followed these directions. On visiting him in the morning, he told me he had passed a horrible night, and that in addition to his usual 'spirit voice,' he had had the company of a host of imps, who were trying to drag him off the earth—that he had finally triumphed over them all, and that in consequence a most magnificent song had been set up in his praise. He smiled at his own relation; he knew 'Queen Mab' had been with him, but I could not help remarking that even in his dreams the connexion of the mind with the sense of the ear seemed to have been strangely disturbed. In the course of the day the medicine acted freely on his bowels. He said he felt lighter and better, but the voice was still at hand, and almost constantly speaking to him, though it now gave him very little concern. The calomel purge was repeated at bed-time, and he also took a draught containing twenty-five drops of the solution of the Acetate of Morphia, and the castor oil was again taken next morning. He was found to have slept well and without dreams—the medicine was acting on his bowels, and he experienced little further annoyance. The healthy state of the brain was gradually restored, and in a day or two more the affection had altogether disappeared.

"I requested the gentleman who was the subject of the above case to give me an account of his symptoms, as well as he could recollect them, previously to the commencement of my narration, and he favoured me with the following, which I have condensed into as small a space as possible:—

"He had, for upwards of a week, been leading a life of considerable dissipation, and in order to rid himself of the uneasy feelings which that life of excitement had produced, he at once refrained from every excess, and took some purgative medicine on going to bed. The effect of this change was irritability and wakefulness; he got up at midnight, lighted a candle, and attempted to read. He found this to be fruitless, for he could not fix his attention, and at this time he fancied he heard a voice talking low, or whispering in the next room; he proceeded there and found he had been mistaken. He then returned to his bed and attempted to sleep, but he still heard the voice, and the attempt was vain. He got up and sought for the source of the voice in every corner of the house, of

course without avail. He became tired of this strange search, and recklessly muttering, 'be thou a spirit of health or goblin damned,' he returned to bed, but not to sleep. He heard incessant and fearful whisperings, relating generally to the misdeeds of his past life, which conscience seemed to have acquired the power of bringing up from the inmost recesses of the heart, and of communicating to the tormenting voice, that through the ear a more startling impression might be made than could result from the mere effect of memory. With the 'morning air," or rather the bustle of the day, the voice vanished for a time, or perhaps was unheeded or forgotten.

"The next night, and the next, he must have 'supped on horrors,' for he heard according to his own expression, 'fiend-like dialogues, songs of ribaldry, and all manner of threats and imprecations.' On the third night he went some distance into the mountains, expecting relief from change of scene, but he had scarcely entered his new abode, when he found the voice was with him:—'Come to your room, come to your room,' was the immediate salutation. While he was at dinner, and during the whole evening, the same words were incessantly repeated. He did at length *go to his room*, and he says, 'throughout that long dark night no description of my sufferings is possible—may they never be renewed. You know the rest. Your kind care soon relieved my mind, though it was some time before the illusion of the ear would yield an inch, and even to this day a sort of echo of it is at times perceived.'

"To this account I shall just add there was no deception of the eye except on one occasion, when he thought he saw a figure near his bed which he attempted to clutch, when it vanished. There never was any appearance of delirium—the tone of the muscles was unaffected, and the health in other respects was little impaired. The patient had been dining in company for a succession of nights, and I know he was in the habit of smoking a good many cigars. His whole appearance at the time of the attack indicated congestion of the cerebral vessels, and it will not have escaped notice, that the symptoms came on when he had commenced a course of abstinence. The stomach was disordered; and there were signs of congestion in the liver."

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13. *Resuscitation from drowning.*—Very erroneous notions continue to prevail relative to the period that an individual may remain submerged, and resuscitation take place. Mr. George Wooley, one of the medical assistants of the Royal Humane Society, and whose residence in the vicinity of the receiving House in Hyde Park, has occasioned his being called upon, he says, to treat most of the cases of submersion requiring medical aid, which have occurred in the Serpentine for some years past, expresses doubts whether the Society "possesses any well authenticated record of a case of a single recovery after the body had been submerged more than five minutes."—*Lancet.*

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14. *Rupture of the left ventricle of the Heart.*—A man, sixty years of age, employed in watering the streets of Paris, fell down suddenly, and instantly expired. On examination, at the Hôpital Neckar, the next day, an irregular rupture of about 3 lines, at the middle part of the posterior face of the left ventricle, was found. This ventricle was dilated, its parietes thinned and softened, but presenting no trace of ulceration. There were some points of ossification at the base of the mitral valve.—*Bulletin Gén. de Thérapeutique*, 15th Aug. 1835.

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15. *Encystment of the Liver.*—In the report of the proceedings of the Anatomical Society, (*Archives Generales*, April, 1835,) it is stated that one of the most curious alterations exhibited to the Society, is the conversion of the liver into a compact yellow mass, more than thrice the ordinary volume of the organ, and throughout the substance of which, non-encysted points of a tissue that is evidently erectile were found. The encysted condition of the liver, either partial or general, is one of the most frequent changes that have been exhibited to the Society, and opportunities have presented of observing it in all its shades, from granular encystment in which each grain appears to have its own cyst, to the lobular encystment, or subdivision of the liver by fibrous bands which isolate variously sized lobules and give the whole organ the embossed appearance so usual in scirrhus. In one case you may have remarked the great thickness of

the fibrous lamellæ that thus formed the partition of the hepatic tissue. You have also seen the general encystment of the organ in a case of ascites, in which the liver turned upon itself, and, enveloped in very thick false membranes, seems to have been condensed by some powerful pressure. In all the cases of encystment, partial or general, you could not fail to remark the general or partial atrophy of the organ, as well as the alteration of the tissue.

To what is this singular tendency of the liver to encystment to be attributed? Is it owing to its anatomical texture or to the specific nature of its diseases? The fibrous septa are the result either of some new production or the consequence of an atrophy of the glandular grains, or lobules, whose disappearance would allow the fibrous lamellæ, previously separate, to join each other; or lastly, they may be a consequence of the presence of the specific membrane, to which the name of Glisson's capsule is applied.

A rare and curious alteration of the liver was presented by M. Cezalis. It had a compactness, colour, and fracture, resembling those of yellow wax.

M. Stenski exhibited a scirrhus of the liver, with dilatation of the vena portæ. —*Lond. Med. and Surg. Journ.* June, 1835.

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16. *Extraordinary case of Generation of Air in the inferior venous system.* By Mr. Raleigh. G. G. a stout youth, lately arrived from England, of about 19 years of age, was sent to Hospital on the evening of the 8th of August last, in consequence of having suffered for several days, from inflammation, on the inside of the left leg; the affected part, presented a patch of about the size of a man's hand, and extended from the middle of the calf, nearly down to the ankle, the integument, at the central point of this spot, was of a dark purple hue, from which, it assumed a red colour, gradually fading towards the circumference, which was clearly defined; the pain, which had been constant, and acute, was confined to the discoloured portion, which was exceedingly tender, and hot—the whole limb below the knee, was rather warmer than natural, but was not much swollen; pain did *not* extend up the thigh, but the glands at the groin, were somewhat enlarged, and tender,—the tongue was coated, but he was free from any general febrile symptoms. xx Leeches near the edge of the inflamed patch. Cold lotion to the leg—R. Calomel, gr. vi.—Pulv. Jalapæ Comp. 3i.—Stat. Sumend.

9th A. M.—The redness, and pain of the leg, much abated, bowels acted on three times in the night. xij Leeches, and Lotion—P. Jalapæ C. 3j. Stat.

10th.—Improving. xiij Leeches and Purgative.

11th.—The inflamed patch on the leg, has nearly entirely disappeared, the limb cool, free from pain, and the glands at the groin, although enlarged, are not tender on pressure. vi Leeches to the leg—Lotion, and Pulv. Purg.

12th.—During the night the limb again became highly inflamed, and the patch on the inside of the leg, assumed a very angry appearance, and was exquisitely painful, and tender; above the knee, the limb is quite cool, and no uneasiness is experienced along the inside of the thigh, or at the groin. His skin is hot; and pulse frequent, and rather full. Bleeding to faintness—R. Calomel, gr. vi.—P. Jalapæ Comp. 3j. directly. Noon.—Pain continuing. viij. Leeches were applied to the leg—and a dose of Calomel administered.

4 o'clock, P. M.—During the afternoon, he has been exceedingly restless, and has now an anxious countenance, a small, rapid pulse—the respiration hurried, and abdomen distended, the spot on the leg is much less hot, or painful, the cuticle has separated from it, and small vesicles have formed round its margin, the whole limb, appears rather larger than natural, but is not tense, and is of healthy colour, and temperature; he complains of feeling very faint, and his skin is suffused with perspiration. The whole limb enveloped in a poultice. R. Calomel, gr. x.—P. Antim. gr. iv.—Ex. Colocynth C. gr. viij.—Stat. Sum.

As evening approached, the abdomen became more distended, the breathing more oppressed, the countenance livid, pulse rapid, and threaded; on the poultice being removed, the whole of the affected lower extremity, was observed to have increased in size, and become more hard, as was the case also, with the opposite limb—but their colour and temperature, continued natural; dyspnœa increased, and he died in the evening, as in a sate of suffocation.

*Post-Mortem Examination, eight hours after death.*—The countenance had a livid hue, and the mouth and nostrils, were filled with foam. The abdomen was

much distended, and the lower extremities more bulky than natural, of pale colour, and had a firm elastic feel, but communicated no sense of crepitation to the finger on pressure being made—the purple patch on the inside of the leg remained, and the cuticle was detached from its surface, the superficial skin peeled from the whole limb with unnatural facility. On cutting into the dark spot, the cellular structure beneath the integument, partook of the discoloration, and was *at this particular situation*, emphysematous; on continuing an incision along the inside of the thigh, in the course of the saphena major vein, an eruption of air took place, from the innumerable ramifications of the veins, divided by the knife, and red froth, was observed to issue, from their minute orifices, giving rise as the knife was carried on, to a peculiar crackling noise. At the ham, the absorbent glands did not appear to have undergone any change, but at the groin, on the integuments, which were much distended, being divided, the upper, and lower chains of inguinal glands, burst forth, and when exposed by dissection, presented a cluster of swellings, as large as pigeon's eggs, of a reddish, or chesnut colour, and spongy consistence; when divided by the knife, the same crackling or popping noise was elicited, as when the knife was carried through any part of the integuments, of the two lower extremities, but in greater degree, and sounded more like the crackling of paper, when squeezed in the hand.

On the abdomen, and chest, being laid open, a most extraordinary condition of some of the viscera, was exhibited. The liver, and spleen, were so enormously enlarged, as to occupy nearly the whole front and sides, of the abdominal cavity; the intestines, which were nearly hidden, were in a perfectly healthy, and collapsed state, but on turning them aside, the kidneys were found to be at least twice their natural size. The chain of glands, passing from the groin and pelvis, in the course of the great vessels, up the lumbar spine, formed a line of tumours, varying in size, from a hazel nut to a large hen egg—and of the same red colour as those at the groin.

The pericardium seemed to fill the anterior part of the chest, the upper edges of the lobes of the lungs only, being made visible by the removal of the sternum.

I now proceeded to an external examination of the blood-vessels, to which I have as yet, avoided adverting. From the purple patch, on the inside of the left leg, I dissected the superficial veins; and found that they were all fully distended with air, having a semitransparent appearance, and exhibiting within their calibre, unconnected portions of blood. The deep seated veins, were in precisely the same distended state, and offered a great contrast in apparent size, to the arteries, over which they rose, so as completely to obscure them—following the course of the vessels from the foot, through the leg and thigh, and entering the pelvis, the iliacs, ascending vena cava, emulgent, hœpatic, splenic, together with all the minor branches, joining to form the ascending venous circulation, were distended to the utmost possible extent with air. On the brachial vein being laid bare, it appeared in the condition in which it is usually seen after death, as were also the external, and internal jugulars, and subclavian, collapsed, and containing *no air*.

The pericardium was now carefully opened, when the heart, with right ventricle, and auricle presenting, and distended to an enormous size, was found to fill the bag, there being only about ℥ss. of reddish fluid in it; the left auricle was collapsed. Unfortunately, before noticing the state of the pulmonary artery, I cut into the right auricle, on which a sudden gush of air took place, and the heart closed to its natural size; exposing the lungs, which now had a natural appearance, and admitted a view of the descending vena cava, which was in a perfectly flattened state. On removing the immensely inflated liver, and placing it on a table, air mixed with blood, issued in the shape of froth, in great quantity; and on incisions being made into the structure of this viscus, it escaped with a hissing noise. The same was the case with the spleen, and kidneys, in a diminished degree, but a division of the lumbar chain of glands, gave vent to a proportionately large quantity of air, and frothy matter.

The bulky viscera removed, attention was directed to an inspection of the internal condition of the blood-vessels. The lining membrane of the ascending venous system, throughout such branches, as from their size easily admitted of examination, was of an unusually red colour, the inner surface of the right auricle, appearing to participate in a slight degree, in this more deep than natural

tinge; the lining of the posterior tibial vein, of the left leg, appeared to be of darker red colour, in the vicinity of the inflamed patch, than elsewhere; but this was *not* very decidedly marked, and the inner surface of the larger branches, and trunk of the saphena vein, was of much the same colour, as in others of the inferior venous circulation; in one or two situations, in the ascending vena cava, a very few minute vessels, were seen here and there, making a tortuous course, for about a quarter of an inch, along its inner coat, but the *general appearance*, was, as if a solution of vermilion, had been washed over the inner surface of these vessels; the colour heightened immediately on exposure to the atmosphere. The blood contained in the veins, was of a dark colour, its consistence completely broken up, unconnected, and mixed with bubbles of air.

The descending venous system, (including the veins of the head, and those of the membranes of the brain,) was in a perfectly natural state, but containing rather a large quantity of blood: no unnatural accumulation of fluid, hat taken place in the head, and the substance of the brain, seemed healthy.

The whole arterial system, was free from any detectable morbid indications.—*India Journal of Med. Science, Nov.* 1834.

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17. *Observations on Continued Fever.* The *Edinburgh Med. and Surg. Journ.* for Jan. 7, last, contains the following interesting propositions by Dr. ROBERT PERRY, Physician to the Glasgow Fever Hospital, relative to continued fever as it occurs in the city of Glasgow Hospitals. This fever seems to resemble the spotted fever, or typhus of this country, and to be distinct from the typhus described by Louis.

"1*st*, That typhus fever is an idiopathic disease solely produced by contagion, that is, by the introduction into the system of a specific animal poison.

"2*nd*, That this specific poison is (as far as yet known) only generated in the human body during the course of this idiopathic fever.

"3*d*, That no other fever, arising either from general causes, as cold, fatigue, improper ingesta, local lesions, or marsh miasmata, is capable of generating this specific poison, or, in other words, producing contagious typhus.

"4*th*, That this contagious idiopathic typhus runs a certain course, which may be modified, but cannot be checked, and is distinguishable from all other fevers by certain symptoms, which in a greater or less degree are uniformly present during its course.

"5*th*, That the following is the usual course of the symptoms by which contagious typhus may be distinguished; viz. languor, nausea, frontal head-ache, rigours, loss of strength and appetite, followed by increase of thirst, quickened pulse, heat and dryness of skin, pain of back, or general soreness over body. The tongue becomes white at base and centre, florid at tip and edges, and on the fifth day from the first attack of head-ache, rigors, or nausea, a reddish, slightly elevated, but irregular papular* or measley eruption, is sometimes sparingly, at other times thickly scattered over the trunk and limbs, but rarely appearing on the face. As the fever advances in severity, the frontal head-ache abates, the tongue becomes dry and brown in centre, the eyes dull, heavy, and suffused, the pulse quicker, the thirst more urgent, the skin more dry and warm, and the mind disturbed. On the sixth day the eruption becomes more general and distinct, like rubeola, occasionally fading or disappearing suddenly, and becoming, as the disease advances, flattened, and of a darker or duskier hue; and when the fever is accompanied with congestion of the brain or lungs, or by thickening of the lining membrane of the bronchial tubes, it assumes that livid appearance usually called petechiæ. This eruption, when slight, frequently disappears in a few days, but more frequently is visible during the whole course of the disease.

"6*th*, That simple unmixed contagious typhus unsually continues for fourteen days from the first attack, when the febrile symptoms abate, the eye becomes clearer, the skin softer, and the mind composed, with less thirst. There is often a slight abatement of the symptoms on the tenth day, and particularly in children, at times nearly complete.

"7*th*, That when the febrile symptoms continue beyond the fifteenth day without abatement, local lesions exist, to which must be attributed the longer continuance

* The term papular does not convey a correct idea of the eruption, as it is not pointed; but I do not know a better to substitute for it.

of the febrile symptoms. The appetite frequently continues defective till the twenty-first day, when all the functions resume their healthy action.

"*8th*, That contagious typhus is often to be met with in combination with other diseases, usually of a local character, as of the lungs, the mucous membrane of the stomach and intestines, more particularly the aggregated glands of the ileum, or the membranes of the brain.

"*9th*, That by the local diseased action of the parts abovementioned, the febrile action of the system is kept up; but the character of the disease is changed, and in such cases it frequently goes on to a fatal termination, or abates upon the twenty-first day from the commencement of the disease.

"*10th*, That between the ages of seven and fifty, sixteen out of twenty are susceptible of being affected by contagious typhus, if exposed to the contagion, and not protected by having previously had the disease; but that children under five years are rarely affected with contagious typhus, and under two, may generally continue to suckle or sleep with the mother labouring under typhus, without catching the disease.

"*11th*, That contagious typhus is an exanthematous disease, and like small-pox, measles, and scarlet fever, during its course produces some change on the system, by which the individual having once undergone the disease, is (as a general rule) secured against a second attack, and may with impunity expose himself to the contagion of typhus, if he continues to reside in the same country in which he previously had the disease. In those cases which are exceptions to the general rule, the disease appears in a mild and modified from, the crisis taking place on the seventh, ninth, or eleventh day.

"*12th*, That contagious typhus never exists in combination with any of the other contagious exanthematous diseases.

"*13th*, That in every case of pure typhus, the blood undergoes, during the disease, a considerable change, becoming darker in colour, and in many cases losing the power of coagulating when drawn from the arm, and in all cases being more loose in texture; and when death ensues during the course of the disease, the blood contained in the heart and large vessels is dark and fluid.

"*14th*, That inflammation of the membranes of the brain, of the bronchia, and of the mucous membrane of the stomach and intestines, and various febrile affections arising from cold, fatigue, improper ingesta, &c. &c. more particularly disease of the aggregated glands of the ileum, and the mucous follicles, often termed *dothinenteritis* or *gastro-enteritis*, have been too often confounded by medical practitioners with typhus fever, though they are characterized by dissimilar symptoms, and require a very different mode of treatment.

"*15th*, That the congested state of the vessels of the brain, the serous fluid on its surface, and the dark fluid state of the blood, are the most common morbid appearances to be met with in *post mortem* inspections of those who have died of contagious typhus, and in many cases the only morbid appearances which are to be found; and the next in frequency is the thickening, or darker appearance of the bronchial lining membrane, and the third in order is the diseased state of the mucous membrane of the intestines, more particularly that of the aggregated glands of the ileum. The relative proportion of these states to each other vary considerably, according to the state of weather, as to heat, dryness, &c.

"*16th*, That *dothinenteritis*, or enlargement of the mucous follicles of the smaller intestines, and enlargement and ulceration of the aggregated glands of the lower third of the ileum occur in combination with contagious typhus, and are to be met with in about one in six of those who die from typhus. It also exists as a disease *per se*, and is characterized by the following symptoms;—quick irritated pulse, tongue dry and florid, more particularly at the tip, often fissured in the centre, urgent thirst, partaking of the remittent character; the face is alternately flushed and pale, particularly one or both cheeks. The disease commences frequently with diarrhœa, which lasts from three to four days, when it ceases, and the stools become for a time natural; the patient complains on pressure of pain in the epigastric, or in the right and left iliac regions; and the abdomen is slightly tumid, and has a puffy feel. As the disease advances, the patient is often seized with vomiting of a greenish fluid, which is always an unfavourable symptom. The dull suffused eye, frontal head-ache, low delirium, and decided *anorexia*, so characteristic of typhus, in nineteen cases out of twenty, are in this disease absent. This disease may exist in every degree of mildness or severity, having no regular

period of termination; it may run on for two, three, or even four weeks, and terminate in gradual restoration to health, without any sensible crisis; or the patient may sink under it from exhaustion, or by hæmorrhage from the bowels, or it may end by some of the ulcers of the aggregated glands of the lower third of the ileum, penetrating the coats of their intestines, and part of their contents being effused exciting *peritonitis*, under which the patient sinks in the course of two, or, at most, three days.

"The less compressible state of the pulse, the clearness of the eyes, the flushing of the cheeks, the more florid, parched, and fissured state of the tongue, the comparative absence of the frontal head-ache, and the complete absence of the typhus eruption, sufficiently distinguish this disease from contagious typhus. To a practised eye, the colour of the face, the flushing of one or both cheeks, the clear eyes, and the irritative state of the pulse, are sufficient to distinguish this diseased state from typhus. When in conbination with typhus, all the symptoms are aggravated in severity after the fourteenth day, and become more distinctly marked. This disease is an equally frequent accompaniment of small-pox as of typhus, and presents the same morbid appearances on inspection after death. In those who have died of this disease of the mucous membrane of the intestines, the blood in the heart and large vessels presents the same appearance as in those who have died of chronic inflammatory disease, in this respect differing from its appearance in typhous cases.

"The observations on which these facts are founded were not made to establish any theory. The reports of the cases and the necroscopic inspections are made in the presence of all who chose to witness them. The facts only are stated, and all are at liberty to draw from others their own conclusions.

"These sixteen propositions, the result of careful observation in upwards of 4000 cases, and 300 necroscopic inspections, are considered as facts fully ascertained. The following are believed, on sufficient evidence, but which cannot as yet be adduced to prove them.

"1*st*, That typhous fever does not become infectious before the ninth day, and is most contagious when the patient is in the convalescent state, when cuticular desquamation usually occurs.

"2*nd*, That the contagious poison is chiefly spread by the desquamation of the cuticle during the period of convalescence.

"3*d*, That the earliest period of the disease making its appearance after exposure to contagion is eight days, more frequently fourteen, and sometimes as long as two months.

"4*th*, That in every case of genuine typhous fever, the vessels ramified upon the *pia mater* are more or less enlarged or congested, and throw out a serous fluid betwixt the convolutions of the brain and on its surface, which to a certain degree compresses the organ, and impairs its functions, and, along with the morbid state of the blood, is frequently the cause of death in this disease."

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18. *On the Diagnosis of some diseases of the thorax in which there is an accumulation of the products of disease within that cavity.*—Dr. W. Stokes communicated to the medical section of the British Association at their meeting in Dublin a paper on this subject. Without entering into the question, Dr. Stokes observed, as to whether organic diseases of the thoracic viscera are followed in all cases by some alteration in the volume of these organs, we may divide cases of thoracic disease into two classes; first, those in which there is no manifest alteration; and secondly, those in which there is a manifest alteration of volume. This division, however, is merely arbitrary. These enlargements are of two kinds; either an actual increase of volume of the parenchyma of the lungs, or a distention of its serous covering. The affections in which these occur, may be termed diseases of accumulation. Another, and more important division, is that founded on the effect of disease, in increasing or diminishing the quantity of air within the thorax. If we take empyema on the one hand, and dilatation of the air cells and pneumothorax on the other, we find that these diseases of accumulation may occur with a diminution or an increase in the quantity of contained air, so that the diagnosis depends, first, on the evidence of accumulation, and next on the physical properties of the accumulated matter. In empyema, there is accumulation and pressure from a non-elastic fluid; in emphysema and pneumothorax, from an elastic medium. In empyema we have, in addition to signs of displacement, proofs of a diminution

in the quantity of contained air; in the other affections, we have also displacement, but the quantity of air is increased.

There are, however, some very interesting points of difference, connected with the results of these diseases on the walls of the thorax. In empyema, the dilatation is most remarkable in the inferior portion of the lung; in empysema, in the superior. A still more remarkable difference appears to be connected with the effect of these two diseases on the muscular parietes of the chest. In empyema, the muscular parietes of the chest yield, in a very obvious manner, to the effects of the disease; the intercostal spaces are obliterated, the affected side enlarged, and the diaphragm depressed. But in emphysema, the disease may be carried to a great amount, without producing these appearances. Now what is the cause of these remarkable differences? To explain this, was the object of the present communication.

It would appear that the explanation of the dilated state of the intercostal muscles was to be sought for in the circumstances attendant on pleuritic inflammation. It is a well established fact, that when muscular structures are in close connexion with inflamed tissues, their functions become impaired; and in such cases we observe, first an increase, and afterwards a diminution of innervation. In the first place, we have pain, spasm, and irritation; in the second, weakness and paralysis more or less complete. Under the latter condition, the muscular fibres lose their contractility. Dr. Stokes here referred to the researches of Dr. Abercrombie on Ileus, in which the morbid appearances were found to be confined to the dilated and not to the contracted parts. With respect to the evidences in favour of the opinion, that the displacement of the thoracic muscles was the result of paralysis, he stated, that in the first stage of pleuritis we have pain on inspiration, without protrusion of the intercostal spaces; but in the more advanced periods, pain is absent and respiration more free, but the intercostal spaces yield, and we have smoothness of the side produced. The latter circumstances corresponds with the minus degree of innervation, or paralysis. The next evidence is, that mere pressure is not sufficient to produce this. If we examine emphysema or hydrothorax, we shall find that in both there is strong pressure exercised on the muscular parietes of the thorax, as shown by the enlargement of the chest; yet the intercostal spaces are not necessarily dilated. The last point of evidence is the sudden yielding of the diaphragm, which Dr. Stokes had observed in certain cases of empyema. This yielding was as extensive as it was sudden, and was not accompanied by evidences of increase of effusion. He thought, therefore, that he was borne out in the conclusion, that the protrusion of the intercostal spaces and the depression of the diaphragm are the result of a semi-paralysed state of these organs.

This principle (if established by future investigations) might be applied to the investigation of other forms of thoracic disease. Of pleuritis he had already spoken; it would be necessary to make a few observations with respect to bronchitis and pericarditis. In all these the suffering of the muscular tissue in the first stage has been recognised, but the effects of inflammation in the advanced condition had been neglected. In bronchitis it is a question how far the paralysis of the circular fibres of the bronchial tubes, may account for the accumulation in those tubes which is so commonly followed by asphyxia, in cases of bad catarrhal fever. In such cases we often see the patients dying from the effects of the accumulation in the lung, although there is no remarkable general prostration, and the individuals possess a considerable degree of muscular strength, so far as the system of animal life is concerned. Again, it might be inquired, how far, in dilatation of the bronchial tube, this condition may have existed. All writers seem to have acknowledged that Laennec's explanation of this occurrence is imperfect and unsatisfactory. Lastly, in cases of pericarditis, this principle (if admitted) would serve to explain the fatal termination of the disease. How accurately do the symptoms of the advanced stage of pericarditis, the syncope, the weakness, the failure of the pulse, correspond with a more or less paralysed condition of the heart? How singularly do the phenomena of the first stage correspond with the increase of innervation which we know to be the first effect of inflammation of the muscular structure? The same principle would serve to explain the supervention of active aneurism on the advanced stages of pericarditis. In the weakened state of the heart it yields to the pressure of the blood, and by degrees its cavities become distended. On the hydrostatic principle the force of this disten-

sion must be every moment increasing, and, of course, the progress of the disease will be proportionally rapid. Now, suppose that the inflammatory process ceases; the muscular fibres of the heart recovered their tone, but they have an increased duty to perform; and from the well-known law in physiology their growth is increased. To dilatation is added hypertrophy, and thus active aneurism is established. This theory differed from that of Andral, who assumes that the hypertrophy takes place from the first, and omits the possibility of an intervening paralytic condition of the heart.

The last point to which Dr. Stokes referred, related to the phenomena of respiration in Laennec's emphysema. If we take two cases of disease of accumulation, as for instance empyema and dilatation of the air cells, and suppose that in one the chest yields *pari passu* with the enlargement of the lung, while in the other it is rigid and unyielding; it is plain that the physical conditions and signs must be different. This appears to afford an explanation of the feebleness of respiration in dilatation of the air cells. If the quantity of air in the lung be so great as to keep it forcibly distended even after expiration, it is obvious that on the next inspiratory effort, the volume of air which enters will be minus the expansion of the lung from its distending force. If this be true, and this cause be the principal source of the feebleness of respiration, it should follow, that if the chest yielded easily to the enlargement of the lung, the disease would occur without the characteristic sign; in other words, the feebleness of respiration would be more a measure of the compression of the lung than a direct sign of Laennec's emphysema. Dr. Stokes brought forward an illustrative case, and concluded by stating, that these observations and suggestions should be tested by future investigation.—*Dublin Journal of Med. and Chem. Sc. Sept.* 1835.

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## MATERIA MEDICA.

19. *Corigeen, or Irish Pearl Moss.*—This article, is at present, getting into such general use, and is so valuable an article of diet in many cases, that the following account of its dietetic properties, and mode of preparation, by J. Bass, Pharmaceutic chemist, cannot fail to interest our readers.

"This valuable moss, commonly known by the above names, has long been highly esteemed by the peasants on the western coast of Ireland as a dietetic remedy for various diseases; more especially for consumption, dysentery, rickets, scrofula, and affections of the kidneys and bladder. Dissolved by being boiled in water, it forms a thick jelly, more pure and agreeable than that produced from many other vegetables, and the jelly made from it is found to agree better with the stomach than any prepared from animal substances. A decoction of the moss, made by boiling half an ounce in a pint and a half of water, or milk, until reduced to a pint, is recommended as food for children affected with scrofulous or ricketty diseases, for such as are delicate and weakly, and for infants brought up by hand, or after weaning. As an article of diet for invalids generally, it is equal if not superior to arrow root, sago, and tapioca, being highly nutritious, bland, and easy of digestion.

"The corigeen appears to possess qualities similar to the Iceland moss, but without its unpleasant flavour, and the quantity of nutritious jelly it produces, is truly surprising.

"*Directions for using the moss medicinally.*—Steep a quarter of an ounce of this moss in cold water for a few minutes, then withdraw it, (shaking the water out of each sprig,) and boil it in a quart of new or unskimmed milk, until it attains the consistence of warm jelly—strain and sweeten it to the taste with white sugar or honey, or, if convenient, with candied Eryngo root; should milk disagree with the stomach, the same proportion of water may be used instead. The decoction made with milk is recommended for breakfast to consumptive patients; and that with water will be found a most agreeable kind of nourishment, taken at intervals during the day, the flavour being varied with lemon juice or peel, Seville orange juice, cinnamon, or wine of any sort most congenial to the palate.

"The decoction in water is also taken for the relief of cough, at any time in the course of the day, when it is troublesome; and it is, for this purpose, simply sweetened with honey.

"In dysentery, the decoction, either in milk or water, may be administered with equal advantage, and in addition to the sweetening matter, (if a tea-spoonful of the tincture of rhatany be mixed with each cupful, a tone will thereby be given to the intestines, at the same time that nourishment will be conveyed to the system, and irritation prevented: a large tea-cupful of the decoction may be taken three or four times a day.

"As a pleasant strengthening food, boiled with milk, and strained, with the addition of a little sugar, it is unrivalled for infants. Delicate persons take it in this way for breakfast and supper with the happiest effects."

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20. *Method of Making Leeches Bite exactly where we wish.*—This method, suggested by Dr. Ernst Elben, consists in cutting small holes in a piece of blotting paper, corresponding to the points in the skin to which we wish the leeches to attach themselves; then moistening the paper, and applying it to the skin in such a way that the holes are exactly over the indicated points. The leeches placed on the paper creep about until they come to the openings, where they attach themselves.—*Medicinische Zeitung.*

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21. Dr. Canquoin's *Formulæ for Preparing the Phagedenic Paste:*—

No. 1. Chloride of zinc one part, wheat flour two parts.
2. Chloride of zinc one part, wheat flour three parts.
3. Chloride of zinc one part, wheat flour four parts.
4. Chloride of zinc one part, chloride of antimony half a part, wheat flour two parts and a half.

Twenty-four to thirty drops of water are to be added for each ounce of chloride.

The preparation of the phagedenic paste requires the utmost care and attention; hence, to procure it properly, the following instructions must be scrupulously followed. The chloride of zinc, reduced to powder, is to be mixed, as quickly as possible, on a slab, with the given quantity of flour. One half of the mixture is immediately to receive its proportion of water, and to be worked up progressively with a spatula, until it forms a homogeneous paste-like honey. This paste is to be brought to the desired stiffness by trituration with the remainder of the dry ingredients, well beat for a few seconds, and then rolled out into cakes or wafers, of from half a line to four lines in thickness.

The quantity of water must be proportionally augmented, according to the increased amount of flour in the second and third formulæ.

The antimonial paste, No. IV., is to be moulded into a crayon shape; because, as it preserves constantly the consistence of soft wax, a suitable thickness can always be given to it, so as to adapt it to the form of certain cancerous tumours, presenting inequalities of surface.

As, however, the flower employed in the above formulæ consists of starch, gluten, and vegetable albumen, it will produce a complex combination with the chloride in the phagedenic paste, which may blunt or interfere with its erosive action; or possibly undergo some fermentative change when applied to an ill-conditioned ulcer, and the viscidity of the compound give rise to more or less difficulty in the manipulation. It therefore occurred to Dr. A. Ure, of Glasgow, that if some inert, inorganic powder were substituted for the vegetable matter, capable of absorbing and retaining a sufficient quantity of moisture to form a paste, which should be a simple mechanical admixture, it would then be possible to turn to account the full escharotic powers of the chloride. The anhydrous sulphate of lime, in impalpable powder, will be found to realize the above conditions. Mixed with the chloride of zinc, in the proportions already indicated, a paste-like putty may be obtained, after these have been well incorporated together with a few drops of water.*

The paste so prepared is perfectly plastic. In its composition the calcareous sulphate seems to perform the part of a porous medium, which allows the escharotic gradually to exude into the morbid texture. In proportion as it is abandoned by its deliquescent ingredient it acquires a firmer consistence, until at length

*Special care must be taken to prepare a pure sulphate, by calcining the crystallized gypsum at a gentle heat in an oven; for the Paris plaster of the shops is often sophisticated with chalk or whitening, which would immediately decompose the metallic chloride, and impair its qualities in a greater or less degree.

it becomes concrete, and constitutes an impervious case for the eschar.—*London Medical Gazette, 19th December*, 1835.

22. *Method of using Dr.* CANQUOIN'S *Phagedenic Paste.*—Where the integuments are sound, the epidermis should be removed by means of a blister; and on the following day one or other of the preparations described in the preceding article, corresponding to the thickness of tissue to be destroyed, is to be applied to the cutis of the diseased part. The sensibility of the surface must also be considered; for should it possess but a feeble degree of vitality, the most powerful form is to be preferred.

The paste No. 1. four lines thick, applied during four days, is capable of producing an eschar of from one and a half to two inches in depth. The same paste, three lines thick, applied during three days, will furnish an eschar of one inch, at least, in depth; the same compound, two lines thick, will in two days determine an eschar of not less than half an inch. The paste No. I., of one line, will yield, in twenty-four hours, an eschar of three lines. Finally, the paste, No. I., of half a line, will produce, in the same time, an eschar of at least one line.

These changes will manifest themselves with the above precision only on tissues endowed with a considerable share of sensibility, and of which the consistence is nearly normal. In the gristly (lardacé,) almost fibro-cartilaginous degeneration, about one-third is to be deducted from the thickness of the eschar abovementioned.

No. II. is employed in cases of cancerous ulceration and superficial carcinoma, which are attended with much pain.

No. III. is eligible in every species of cancerous affection, occurring in nervous subjects who are incapable of supporting the violent pain which the preceding more concentrated escharotics might occasion. It is so much less productive of suffering, as it is slower in its action.

Lastly, No. IV. the antimonial paste is best adapted to nodulated cancerous tumours, for which a more decided escharotic action is required.

These preparations, applied over a denuded surface, excite, in a few minutes, a feeling of heat, which, ere long, rises to a burning heat; which unpleasant symptoms may be relieved by an opiate enema.

When the operation of the paste is complete, it may be gently taken off, and the eschar covered with an emollient poultice until its separation, which usually happens, as formerly stated, from the eighth to the twelfth day, according to the thickness of the layer employed. The application is to be repeated again and again till the whole morbid structure is removed; after which the surface is to be treated with simple digestive ointment; or, in case of acute cancer, with cataplasms, until the cure is finished.

In certain modifications of carcinomatous tumours that are voluminous and prominent, Dr. Canquoin, instead of applying the caustic on the anterior segment, surrounds the base with a ring of paste two lines broad and four deep.

Should the carcinoma present a central depression, its destruction may be accomplished by using the phagedenic paste in a spiral form.

The chloride of zinc will probably form a valuable means of curing incipient cancerous ulcers of the uterus. These, in their early stage, may be looked upon as purely local affections, since Bayle has demonstrated, by numerous dissections, that the tissues of the organ are perfectly sound at the distance of two or three lines above the solution of continuity. In some instances it is reported that they have been healed by the topical use of the acidulated nitrate of mercury, as also by the caustic potash: but as both have been objected to in practice, the former from its tendency to spread over the healthy parts and excite inflammation, the latter because it is too uncertain in its effects, corroding too profoundly, and giving rise to fatal inflammation, amputation of the cervix has come to be regarded, by many, as the sole alternative for eradicating the disease. Now, the chloride of zinc, liable to none of the inconveniences that have been imputed to these other caustics, employed in its most concentrated form, will furnish its characteristic dry, easily definable eschar, destroying the morbid parts, and leaving behind a healthy surface, which will rapidly cicatrize: thus saving the patient the necessity of submitting to an operation which, although unaccompanied by much pain, is yet most repugnant to her feelings.

Cauterization with the chloride must likewise prove advantageous in carcino-

matous affections of the tongue, lips, and of the rectum, where arsenic, from its powerful poisonous qualities, is totally precluded.—*Ibid.*

23. Dr. Canquoin's *Resolvent Pomade.*—The following ointment is recommended for effecting the destruction of extensive scirrhous surfaces, previously flattened by long-continued methodical compression, as also of certain dense scirrhi. Take of oxygenated pomade, prepared by triturating eight parts of boiling axunge with one of nitric acid, one ounce; melt this by a gentle heat, and add to it three drachms of the acid subdeuto-nitrate of mercury. Increase the heat a little, till the nitric acid become decomposed, so as to proxygenate the pomade, and bring the salt into intimate union with it. The ointment, when well prepared, is very hard, and of an orange-yellow colour.

Dr. Canquoin describes the case of a woman affected with a scirrhus of one half of the face, who had been previously treated for it, but without benefit; and she seemed doomed to become, ere long, a victim to the frightful malady. However, thirty-five days' application of the above ointment sufficed to work a cure, without the slightest trace being left.—*Ibid.*

24. Dr. Canquoin's *Maturative Ointment.*—Dr. Canquoin has procured in two or three months time, and even less, a softening and suppuration of indolent scirrhous tumours of a violet-red hue, by the following application. Take of the acetic infusion of the bark of spurge laurel, ℥iss.; of molasses, ℥iss.; olive oil, ℥j.; ox bile, ℥ij. Mix together, and reduce, by the aid of heat, to the consistence of an ointment. Withdraw the heat, and add, unguent. basilic. ℥iss.; cerati fusci,* ℥iss. Mix the whole well together, and incorporate with each ounce a drachm of the subdeuto-nitrate of mercury.—*Ibid.*

## THERAPEUTICS.

25. *Treatment of Itch.*—Dr. Lison, physician to the hospital of Donzi, lauds, in a communication in the *Journal Gen. de Therapeutique*, (15th July, 1835,) the efficacy of the following ointment for the cure of itch. ℞. Litharge ℥j.; olive oil ℥iv. Mix, place upon a moderate fire, and stir until the litharge is well dissolved, and the ointment acquires a slight blackish tint.

Half an ounce is to be used in friction to the hands, feet, and arm pits, morning and night.

26. *Sulphuret of Potash in Asthma.*—An individual labouring under a severe attack of spasmodic asthma, applied to Dr. Carusi, who, having ordered the aqua lauro-cerasi, internally, and frictions with tartar emetic ointment, without success, directed sixteen grains of the sulphuret of potash, rubbed into a paste with honey. This quantity was divided into four portions, one of which was given three times a day. After the administration of the last dose, the asthma entirely disappeared, and the cure was complete.—*Lond. Med. & Surg. Journal*, Nov. 1835.

27. *On the Persesquinitrate of Iron in Chronic Diarrhœa.*—Dr. Robert J. Graves in one of his clinical lectures, states, that he has lately used in chronic diarrhœa, with very considerable success, the sesquinitrate of iron, a preparation introduced by Dr. Christison. "The combination of iron with nitric acid forms a remedy," he observes, "possessing tonic; and, at the same time, astringent powers, and hence peculiarly well adapted for the treatment of certain forms of chronic diarrhœa and dysentery. You will be consulted by females of a delicate and weakly habit, who frequently exhibit symptoms of nervous derangement, such as palpitations, sleeplessness, and head-ache, who are easily excited or alarmed, have a tendency to emaciation and paleness, and have little or no appetite. Combined with these general symptoms, you find that they have been labouring under diar-

*Or Onguent de la Mere, prepared with litharge, axunge, butter, and mutton suet, of each 25 parts, yellow wax 18, and black pitch 8.

rhœa for weeks, and even months, and that this, with the other causes of debility, has rendered their condition exceedingly uncomfortable. You will also be informed by the patient, that she has tried many remedies without benefit, and that she is extremely anxious to have something done to give relief; and hence it is a matter of importance to be acquainted with any remedy which may be likely to prove serviceable in such emergencies.

"It would appear that this form of diarrhœa does not depend on an inflammatory condition of the stomach and intestinal canal, for the indications of inflammation are absent, such as pain, tenderness on pressure, thirst, redness of tongue, and severe or continued griping. It would rather seem to be connected with congestion of the mucous membrane of the digestive tube of a passive nature, and resembling the scrofulous; it is also of an unmanageable character, and very seldom amenable to the ordinary modes of treatment. The common astringent remedies totally fail; chalk mixture, kino, rhatany root, and catechu, are useless, and in such cases it has been observed that opium is generally injurious. If you prescribe opium it certainly checks the disease for a time, but this temporary relief is accompanied by debility, malaise, restlessness, and many other uneasy symptoms, and the diarrhœa soon returns, and is as bad as ever. The medicine which I have found most effectual in such cases, is the persesquinitrate of iron, in the form recommended by Dr. Christison. With it I have succeeded, within the last two months, in curing two cases which had been exceedingly obstinate and of very considerable duration, the disease having in one case resisted all the efforts of medical skill for seven months, and in the other for two years. Seven or eight drops of the liq. ferri persesquinitratis, increased gradually to twelve or fifteen in the course of the day, was the quantity prescribed in both cases. In the course of four days a slight diminution of the diarrhœa was perceived, in a fortnight the patient felt much better, and in a month or five weeks it had disappeared altogether. This took place without being followed by any bad effects; there was no swelling of the stomach, no tympanitis, no tormina, no restlessness or nervous derangement; the patients recovered their health and strength, and the cure was at once safe and permanent.

"The effect of this remedy admits of an explanation on either of two grounds. You are aware that nitric acid exercises a very powerful influence over many morbid discharges. In chronic diarrhœa or dysentery, and in a certain form of diabetes, it is one of the most efficient and appropriate medicines which can be prescribed. We can, therefore, understand its peculiar adaptation to the case of which I have spoken. The nature of the complaint requires a tonic as well as an astringent; and you all know that nitric acid is used as a tonic in many cases attended with debility and emaciation. With respect to iron, its mode of action is equally intelligible. Many of the salts of iron exert a very remarkable influence on the conditions of mucous membranes. The sulphate, tartrate, and many other preparations, are prescribed with great advantage in chronic fluxes from mucous membrane; hence the benefit so frequently derived from the use of Griffiths' myrrh mixture in the treatment of chronic bronchitis characterized by a supersecretion from the bronchial membrane, unaccompanied by fever. You perceive, then, both the medicines which enter into the composition of persesquinitrate of iron are well calculated to check morbid discharges and strengthen the tone of the system. The only objection to this remedy is, that it is apt to spoil: if kept longer than a week it is decomposed, and hence you should always take care to have it quite fresh when you prescribe it, in order to secure its full operation."—*London Medical and Surgical Journal*, 23*d May*, 1835.

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28. *Observations on hoarseness or loss of voice, from sore throat or slight laryngeal inflammation.* By Robert J. Graves, M. D.—A form of hoarseness is frequently observed in growing boys or girls, which assumes a very chronic character, and often resists for a long time almost every form of treatment. A boy gets cold, followed by sore throat and feverish symptoms, which may last for a few days, and then disappear under the use of aperient medicines, or perhaps without any interference on the part of the parents or the physician. The feverishness and soreness of throat subside, but the hoarseness remains, and the boy can speak only in whispers. This condition may last for weeks and even months without any other symptom whatever; the patient has no cough or difficulty of breathing,

his appetite is good, sleep and digestion natural, and there is no appearance of emaciation. The only thing amiss with him is the impairment of voice, and this continues so long that it gives rise to a considerable degree of anxiety on the part of his parents. When you examine the fauces you find no appearance of inflammation in the mucous membrane, and there is no superficial or deep-seated tenderness in the region of the larynx. How are you to treat this form of disease? It depends on a relaxed and weakened state of the chordæ vocales, and perhaps the muscles of the larynx, the result of inflammation of an exceedingly chronic character, and will not be benefitted by leeches, or antiphlogistics, or low diet. The best thing you can do in such a case is to have recourse to the use of strong stimulant gargles. You begin with a drachm of the tincture of capsicum in six ounces of decoction of bark, which is to be used five or six times a day. After some time you can increase the quantity of tincture of capsicum, but you never need go farther than half an ounce in a six ounce mixture. In the next place, you will have recourse to frictions over the region of the larynx and external fauces with croton oil, which is much better adapted for such cases than tartar emetic ointment. The eruption produced by tartar emetic ointment is productive of a great deal of annoyance, and when the pustules break they prevent the boy from wearing his neckcloth. All the purposes of a counter-irritant are quite as well fulfilled by croton oil, and with much less inconvenience. The best form for using it is the following:—℞. Liniment: camphoræ comp. ʒj. Olei crotonis tiglii, ♏ xx. Of this mixture, a small quantity, say a couple of drachms, should be poured into a saucer and rubbed over the fore part of the neck night and morning, until a full crop of pimples appears. When these have dried up and desquamated, it should be again applied, and in this way a mild and manageable but very effectual degree of counter-irritation, can be kept up for any length of time. In addition to these measures (should the disease continue,) I would strongly recommend small doses of iodine and change of air. I have been induced to give iodine in such cases from observing that inflammation of a chronic character seems to have many points of resemblance to that which arises from scrofula. The last thing which I have to observe on this form of hoarseness is, that you should, particularly in the beginning, insist on the observance of strict silence, a point which is said to be exceedingly hard to be attained where the patient happens to be a female. In some cases all these means fail, and then something more energetic must be attempted. The inhalation of the vapour arising from tincture of iodine and tincture of conium added to hot water in a proper apparatus, has proved useful to some, but in all obstinate cases the sheet anchor is mercury exhibited internally, and by means of inhaling the fumes of hydrargyrum cum cretâ. In general it is necessary to continue the mercurials until the mouth is slightly touched, when the hoarseness will be found to yield. It is obvious that before we employ mercury in a case of chronic hoarseness, we must feel well assured that we have not to deal with a hoarseness arising from a phthisical tendency, for in this case mercury would prove injurious to the constitution. In such cases the stethoscope and percussion often afford valuable assistance, by showing that although the patient has had a hoarseness and cough for weeks or even months, yet there are no symptoms of tubercular developement in the lungs. The cough is only the result of laryngeal inflammation or irritation; the submaxillary glands and the amygdalæ are often slightly enlarged, the fauces are red, and the back of the pharynx is covered with irregular superficial excoriations.—*Lond. Med. and Surg. Journ.* May 30, 1835.

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29. *On Sleeplessness, and its Treatment.* By R. J. Graves, M. D. (Extracted from a clinical lecture delivered at Meath Hospital, Dublin.) Sleeplessness is a very curious result of disease. It accompanies certain morbid conditions of the system brought on by actual disease, or by grief, care, and various other forms of mental disturbance, continues to harass the unhappy sufferer night after night, and frequently resists the most powerful and decided narcotics. I dot not intend to enter into any inquiries respecting the different states of the constitution in which it occurs; my purpose is merely to offer a few practical remarks on the more obvious and striking examples, with the view of illustrating the cases to which I have directed your attention.

There is a form of sleeplessness which is frequently the precursor of insanity,

and which has been well described by my friend Dr. Adair Crawford. The watchfulness in such cases is accompanied by the well known symptoms of incipient mental derangement, and its treatment is therefore inseparably connected with that usually resorted to in cases of threatened insanity, and embraces the employment of means moral as well as physical. Of these it is not my intention to speak; I may observe, however, that Dr. Crawford has found opium, gradually increased to very large and frequently repeated doses so as to produce sleep, the best remedy.

In the case of jaundice, the patient passed several nights without any sleep. He was just beginning to recover from the jaundice when this new symptom appeared, and I directed your attention particularly to the circumstance, because every manifestation of nervous derangement connected with jaundice should be carefully watched. It frequently happens that jaundiced patients sleep too much, and in some cases the disease is accompanied by convulsions, succeeded by coma, most alarming symptoms, and almost invariably the harbinger of a fatal termination. Dr. Marsh was the first who directed our attention to the great fatality of those cases of jaundice in which convulsions occur: I have seen but one instance of recovery. It was in the case of a gentleman labouring under icterus, very considerable hepatitis, with enlargement of the liver and anasarca, with ascites. He was treated by Dr. Osborne and myself, and had at least a dozen long and violent convulsive paroxysms, ending in coma, succeeded by temporary forgetfulness and fatuity. Repeated leeching of the right hypochondrium, active purgation, and mercurialization of the system removed all the symptoms of disease, and he slowly but perfectly recovered. A very able and original writer, Dr. Griffin of Limerick, has detailed the particulars of some interesting cases of this nature in the *Dublin Medical Journal*. You perceive, therefore, that in jaundice every thing denoting an unusual state of the nervous system, whether it be too much sleep, or too little, demands your attention.

In this man's case the jaundice was the result of an attack of hepatitis. We treated it with leeches, blisters, and the use of mercury, and in the course of a few days the stools became copiously tinged with bile, and symptoms of improving health appeared. At this stage, the dejections being bilious, but the jaundice still remaining, he began to exhibit symptoms of restlessness and nervous irritability, and finally became perfectly sleepless. Here, gentlemen, we had to deal with a new symptom, extremely harassing to the patient, and likely to react unfavourably on the original disease. As a preliminary step I determined to evacuate the bowels, and for this purpose I prescribed a purgative draught, consisting of five ounces of infusion of senna, half an ounce of sulphate of magnesia, a drachm of tincture of senna, and a scruple of electuary of scammony. My object was to purge briskly, and then give a full narcotic. In all cases of jaundice depending on hepatic derangement, after you have succeeded in producing bilious evacuations, you should never omit prescribing an active aperient every second or third day for the space of ten days or a fortnight, with the view of carrying off the remains of the disease so as to prevent the occurrence of a relapse. Hence you will find such cases very much improved by the use of Cheltenham water, taken every day for three or four weeks *after the reappearance of a bilious tinge in the alvine discharges.* The stimulus of the purgative causes an increased flow of bile into the intestines, which removes the hepatic congestion, and carries off what is popularly termed the dregs of the disease, and promotes a rapid and complete recovery. It is a simple but successful practice, and I would advise you never to omit its employment in cases of this description.

With respect to purgative mixtures, I may observe that you should prescribe a larger quantity of the infusion of senna than is generally ordered, if you wish to secure its certain and decided operation on the intestines. Hospital nurses, who reason from facts and experience, know this, and when directed to give a senna draught they always give a small tea-cupful. They administer from four to six ounces at a time, and I have observed that in this way the action of the medicine is more certain, and the benefit derived from it more extensive. I am convinced that the usual mode of giving this valuable purgative in private practice is bad; the quantity given is too small, and consequently it is necessary to repeat the dose several times, a mode of proceeding apt to occasion much nausea and griping, I would therefore recommend a quantity varying from three to six

ounces, to be administered in all cases where the patient's condition will admit of free purging. A most accurate observer of the effects of medicines, Mr. Kirby, is in the habit of ordering purgative mixtures in chronic cases to be taken at bed-time, and not, as is usually done, in the morning. He asserts that their action is milder and less irritating to the bowels when the patient lies in bed and is asleep until the period of their operation, than if he were up and about.

After the purgative had produced four copious discharges, I prescribed eight minims of black drop, to be taken at a late hour in the evening. Whenever I give opiates to procure sleep, I always observe the rule laid down by Dr. M'Bride, (a celebrated physician of this city), to select the period at which nature usually brings on sleep, and which varies according to circumstances and the habits of the patient. Whenever you have to deal with watchfulness in patients labouring under morbid states of the constitution, as, for instance, hectic, inquire when the tendency to sleep usually occurs, and administer your narcotic about an hour or two before its occurrence. It is between three and five o'clock in the morning that the inclination to sleep is strongest; it is about this time that sentinels are most apt to slumber at their post, and consequently attacks upon camps or cities, made with the intention of effecting a surprise, are usually undertaken about this period of the morning. How well marked is the periodic tendency to sleep at this hour in all patients labouring under hectic fever produced by whatever cause. How often do we hear the poor sufferer complain of restlessly tossing about in his bed until three or four o'clock in the morning, when at last sleep, welcome although uneasy, for a few hours separates the patient from his pains. If given at an early hour in the evening, the effect of the opiate is not coincident with this periodic attempt of the constitution, and it fails in producing sleep, but if exhibited at a late hour, it begins to produce its soporific effect at the very time when nature inclines the harassed sufferer to repose, and the result of these combined influences is a deep, tranquil, and refreshing sleep. By observing this simple rule, I have often succeeded in producing sleep in cases where various narcotics had not only failed, but even added considerably to the irritation and discomfort of the patient.

In cases of sleeplessness, where you have administered an opiate with effect, be careful to follow it up for some time, and do not rest satisfied with having given a momentary check to the current of morbid action. To arrest it completely, you must persevere in the same plan of treatment for a few days, until the tendency to sleep at a fixed hour becomes decidedly established. You must give an opiate the next night and the night after, and so on for five or six nights in succession, and where the watchfulness has been of an obstinate and persistent character, narcotics must be employed even for a longer period and in undiminished doses. I do not allude here to the sleeplessness which accompanies confirmed hectic and other incurable diseases; such cases require a particular mode of treatment, and generally call for all the varied resources of medicine. But in those instances of watchfulness, which are frequently observed towards the termination of acute diseases, it is always necessary to repeat the opiate for some time after you have succeeded in giving a check to this symptom. You need not be afraid of giving successive opiates lest the patient should become accustomed to them, and a bad habit be generated, for the rapid convalescence and renewed health, which are wonderfully promoted by securing a sound and refreshing sleep, will soon enable him to dispense with the use of opiates.

Another disease in which sleeplessness is a prominent symptom, is delirium tremens. We have had an example recently in our wards, and you have seen the means employed to overcome it. The patient came into hospital with symptoms of extreme nervous excitement and watchfulness, which had continued for some time, and were brought on, as is most commonly the case, by repeated fits of intoxication, succeeded by a pause of perfect sobriety—in Irishmen the result of necessity or accident. In this man you must have remarked the signal benefit which attended the use of a combination of tartar emetic and opium, and how rapidly the watchfulness disappeared. I shall not enter into the details at present, as I purpose to return to this subject on a future occasion.

There is, however, one form of nervous irritability, frequently observed in persons who are in the habit of drinking freely, but without running into excess, and presenting, as it were, a shadow of delirium tremens, on which I shall make

a few remarks. This curious state of the nervous system is generally found to exist in men about the middle period of life, and who consume a larger quantity of spirituous liquors than they are able to bear. Such persons, without suffering in appearance, or losing flesh, get into a chronic state of disturbed health, manifested by nausea, and even dry retching, in the morning, loss of appetite, and impaired digestion; but, in particular, by a deranged and irritable state of the nervous system, and by watchfulness. This forms one of the most distressing symptoms, and the patient generally complains that he cannot get any sound and refreshing sleep, that he lays awake for hours together, and that when he slumbers his rest is disturbed by disagreeable dreams, or broken by slight noises. How are you to treat this affection? I can give you a valuable remedy for this deranged state of constitution—one which I have often tried, and which, from experience, I can strongly recommend. It is a mixture, composed of tincture of Columbo, quassia, gentian, and bark—say an ounce of each; and to this is added a grain, or even two, of morphia. A compound tincture, somewhat analogous to this, is much in use among military gentlemen and others, who have resided for a considerable time in the Indies, where, from the heat of the climate, and the prevalence of intemperate habits, the stomach becomes relaxed and the nervous system irritable, so as to represent, in a minor degree, the symptoms which characterize delirium tremens. You perceive I combine several tonics to form this mixture, because they are well known to produce a more beneficial effect when combined than when administered singly; and I add to these a narcotic, which has the property of allaying nervous excitement without deranging the intestinal canal. The dose of this mixture is a tea-spoonful three or four times a-day, and the best time for taking it is about an hour before meals. It gradually removes the nausea and debility of stomach, lessens nervous irritability and watchfulness, and, with a proper and well-regulated diet, and attention to the state of the bowels, I have seen it produce excellent effects. In such persons much benefit is derived from the use of the tepid shower-bath.

Fever is another disease in which sleeplessness is a symptom, frequently of an unmanageable character, and pregnant with danger to the patient. You witnessed this in the case of the boy who lies in the small Fever Ward, next to the man who is at present labouring under general arthritis. This boy had fever of a mild description, and unattended with any bad symptoms. His case scarcely required any attention, and he had almost arrived at a state of convalescence without the aid of medicine, when he began to lose his rest, and absolutely became sleepless for several nights. I beg your attention to this case, for many reasons. In the first place you have seen that we tried many remedies without success, and afterwards fortunately hit on one which answered our purpose completely. Let us examine the nature of the medicines prescribed, and our reasons for giving them.

In the first place, we gave, as in the case of jaundice, an aperient, followed by a full dose of black drop. It failed in producing any sleep; we repeated it a second and a third time, but without the slightest benefit. I then remarked to the class, that as I had noticed the good effects resulting from a combination of tartar emetic and opium in the case of delirium tremens, where opium alone failed in procuring sleep, it would be proper to give this remedy a trial. I observed at the same time, that I was convinced that the preparations of antimony have a distinct narcotic effect, and that I had seen patients in fever whose watchfulness had been removed by antimony given in the form of tartar emetic or James's powder. I said it was my firm impression that tartic emetic, along with its other effects, exerts a decided narcotic influence on the system, and that it is this which makes it so valuable a remedy in treating the sleeplessness of fever and delirium tremens. Hence I have been in the habit of giving tartar emetic combined with opium in fever, and, I must add, with very great success. Our predecessors were much in the habit of using antimonial mixtures in the treatment of fever, and they did this because they knew, by experience, that these remedies worked well. It is at present too much the fashion to decry their practice, and in this instance I think with very little justice.

In this boy's case, however, the combination of tartar emetic and opium did not succeed in producing sleep. Having thus failed in our first and second attempts, we had recourse to the liquor muriatis morphiæ, a preparation first

brought into use by Dr. Christison, and which, in the form usually employed, is equal in strength to laudanum. It is an exceedingly valuable preparation for many reasons, and one which has the strongest claims to your notice. Being of the same strength as laudanum, it saves the trouble of learning and remembering new doses, and, in addition to this, it possesses the more important advantages of inducing sleep with more certainty, and not acting as an astringent on the bowels, or affecting the head so frequently as laudanum. You observe that I say *so frequently;* I do so because cases now and then occur in which even moderate doses of the liquor of the muriate of morphia produce quite as much head-ache as laudanum. I prescribed the former in doses of fifteen drops every six hours, so as to give sixty drops in the day, and continued this practice for two days, but without the slightest effect. Here you see three modes of inducing sleep completely failed. The boy remained for a day without taking any medicine, and then we made another attempt, which was more successful. We first prescribed a purgative enema, and, after this had operated, he was ordered an opiate injection, consisting of four ounces of mucilage of starch, and half a drachm of laudanum. He fell asleep shortly after using the opiate injection, and did not awake until the next morning. The following night the opiate was repeated in the same form and with equal success; convalescence went on rapidly, and the boy's health is now quite re-established.

Here, then, is a singular fact, attested by this case, that opiates in the form of injection will succeed in producing sleep, where they have completely failed when administered even in large and repeated doses by the mouth. Baron Dupuytren was the first who made this important observation, and proved that narcotics applied to the mucous surface of the rectum exercise a powerful influence on the nervous system, always equal, and very often superior, to the effect produced by taking them into the stomach. He maintains, that in delirium traumaticum and delirium tremens a certain quantity of opium, when prescribed in the form of enema, will act with more decided effect in allaying nervous excitement, than the same or even a larger quantity when taken by the mouth. I have no hesitation in giving full credit to this assertion, as the results of my experience tend strongly to confirm its truth. I have, not long since, published in the *Dublin Med. Journal*, the case of a patient in Sir P. Dun's Hospital, who was reduced to the last stage of debility and emaciation from the combined effects of mercury and syphilis. The torture which this man endured from nocturnal pains and a total deprivation of sleep, was such that he swallowed enormous doses of opium; in fact, he had, previously to his admission into Sir P. Dun's Hospital, exhausted all his means in purchasing opium. While in hospital he used to take 150 drops of black drop in the course of a day, and yet, notwithstanding these excessive doses, he could only get a few minutes of unrefreshing slumber. After some time I changed the plan of treatment, and had the black drop administered in the form of enema. It succeeded in producing a decided soporific effect, and in a short time he was able to enjoy a sufficient quantity of repose, from taking only one-tenth of the quantity used by the mouth. I have also, in the same paper, adverted to the case of a medical gentleman who laboured under an affection of his joints, which was accompanied by spasms of the limbs, and most excruciating pains. His agony was so intense that he used to swallow grain after grain of opium, until he had taken to the amount of thirty or forty grains, with the view of procuring some alleviation of his sufferings. He was prevailed on to give up altogether the use of opium by the mouth, and employ it in the form of enema, which he did with the most striking advantage, the quantity which succeeded in giving relief in this way being scarcely the twentieth part of what he ordinarily used.

It is unnecessary for me to enter here into any discussion with respect to the nature and treatment of delirium traumaticum, and the sleeplessness which always accompanies it, as you will find this subject very ably treated in M. Dupuytren's works, and in a very instructive and elegant lecture delivered by Mr. Crampton (the Surgeon General) in this hospital, and published in the last volume of the *London Medical and Surgical Journal*. There is, however, one kind of sleeplessness arising from irritation of the skin produced by blisters, which frequently assumes a very serious character, and on which it may be necessary to offer a few observations, as the subject has not been noticed sufficiently by practical

writers. Trifling as the irritation resulting from a blister may seem, yet, under certain circumstances, it is a symptom of highly dangerous aspect, and becomes a source of just alarm. I have witnessed the loss of some lives from this cause, and many patients have, to my knowledge, been rescued from impending danger, by an early and proper share of attention being directed to its phenomena and treatment.

The bad effects on the nervous system occasionally produced by the application of blisters, are somewhat analogous to those which result from wounds and other external injuries, and to be accounted for on the same principle. Wounds and injuries sometimes make an impression on the nervous system, by no means proportioned to the importance of the injured organ to life, or to the extent of the mischief. An injury produced by a body which strikes the sentient extremities of the nerves with great force, will sometimes produce very remarkable effects on the system. Thus a musket ball striking a limb may, without wounding any great artery or nerve, or destroying any part of importance to life, produce a train of nervous symptoms of an extraordinary character. The person, without feeling much pain, and scarcely knowing that he has been wounded, without being terrified, or having his imagination excited by any apprehended dangers, turns pale, gets a tendency to faint, and sometimes actually dies from the impression made on the nervous system. In the same way an external injury reacting on the nerves may bring on high mental excitement, delirium, and a total privation of sleep, as we exemplified in delirium traumaticum. I mention this with the view of establishing the proposition that impressions made on the sentient extremities of the nerves are sometimes reflected on the nervous centres, producing the most alarming effects. In this way we can understand how the irritation of blisters may produce sleeplessness, mental aberration, and a train of symptoms analogous to those which characterize delirium traumaticum.

The delirium and sleeplessness arising from the irritation of blisters is by no means an uncommon disease. I have seen many examples of it in private practice, and I am anxious that you should be acquainted with its nature and treatment. It is generally met with in the case of children, in whom the cutaneous surface is extremely tender and irritable. I could relate several instances in which I have been called on to visit children labouring under fever, where symptoms of high nervous excitement were present, and where I found the little patients delirious, screaming, and perfectly sleepless from this cause. I have found this alarming affection generally occurring at an advanced stage of fever, and exhibiting a train of symptoms which closely resemble hydrocephalus. I have observed that after the application of a blister to relieve some suspected cerebral, or abdominal, or thoracic affection, jactitation, restlessness, constant application of the hand to the head, and delirium have appeared, and that these symptoms had been mistaken for incipient cerebritis or hydrocephalus, and treated with leeches and purgatives. When the blister had been applied to the nape of the neck, the soreness and irritation of the skin on that part *cause the child to roll its head from side to side on the pillow, with that peculiar motion and scream supposed to prove to a demonstration the existence of hydrocephalus.* I have learned also, that the above measures, so far from giving relief, have only tended to produce an exacerbation of the disease, and that the medical attendant has given up the case in despair. Now, gentlemen, if called to such a case what should be your practice? In four cases of this kind I gave my opinion frankly to the medical attendant, and told him he was pursuing a wrong course, that the disease was analogous to delirium traumaticum, and not to be treated by leeches or purgatives, and least of all by blisters. I observed to him that these symptoms had made their appearance shortly after the child had been blistered for suspected disease of the belly, or head, or chest; and that it was useless to attempt to remove the disease by leeches, or purgatives, or blisters. The remedy I always proposed was opium, and it was acknowledged in four or five cases, that this remedy had succeeded not merely in relieving the existing symptoms, but in saving the patient's life. In such cases, particularly in young children, the opium must be given in small but frequently repeated doses, so as to ensure its energetic, but safe action, and the greatest care must be taken to soothe the irritated portion of the skin, by ointments, poultices, &c., *while unwearied diligence must be bestowed upon the task of preventing the child from scratching the blistered surface.* To effect this

the child's hands must be muffled in appropriate gloves, and must be secured in the sleeves of a shirt made for the purpose.

I beg your attention still further to this subject of sleeplessness and delirium. I wish to mention the case of a gentleman who was a pupil of mine. This gentleman studied hard, attended lectures regularly, and was constantly in the dissecting room. While thus occupied, he happened to wound one of his toes in paring a corn, and afterwards wore a tight shoe on the injured foot. A small imperfect abscess formed in the situation of the corn, which was opened by one of his fellow students; the incision gave very great pain, and was not followed by any discharge of matter. Next day he was feverish, and the lymphatics of the injured limb became extensively engaged, the inflammation ascending towards the glands of the groin, and having a tendency to form a chain of insulated patches in different parts of the leg and thigh along the course of the lymphatics. This you will generally find to be the case in inflammatory affections of the lymphatics; the inflammation is seldom continuous, but, in the majority of cases, is developed at certain insulated points, where small diffuse suppurations form very rapidly. After a few days, this young gentleman's fever increased to an alarming height; he became completely sleepless, and had incessant delirium. He was purged briskly, leeched extensively and repeatedly, his head shaved, and cold applications so constantly applied, that he appeared half drowned and collapsed. Notwithstanding this very active treatment, not the slightest relief was obtained; neither were the symptoms mitigated by incisions made in the inflamed patches for the purpose of evacuating matter; the sleeplessness continued, and the delirium was as wild as ever. I saw him on the seventh or eighth day, when all antiphlogistic measures had failed, and his friends were quite in despair. On being asked my opinion, I stated that I looked upon the case as one of delirium, not proceeding from any determination to the head or inflammation of the brain, but depending on a cause analogous to those which produce delirium traumaticum, and that instead of antiphlogistics I would recommend a large dose of opium and some porter to be immediately given. Mr. Cusack, who visited the patient after me, concurred in this view, and a full opiate was administered in repeated doses. It succeeded in producing sleep and tranquillizing the nervous excitement. I may here observe that a few days afterwards this gentleman had a return of the symptoms of cerebral disturbance with sleeplessness, in consequence of omitting his opiate, and that the opiate and porter were again administered, and again succeeded in removing the delirium and watchfulness. By perseverance in the use of the same means, the disease was completely removed, and convalescence established.

The last kind of sleeplessness to which I shall direct your attention, is that which is frequently met with in persons of a nervous and irritable disposition, in hypochondriacs, and hysterical females. You will find such persons, although of active habits, and with tolerable appetites, complaining of a total privation of their natural rest, and it is astonishing to think how long they may continue subject to this harassing watchfulness. I have frequently observed this affection among females of nervous habit, who possessed strong feelings of attachment to the interest and welfare of their families, and who were remarkable for an exemplary and over anxious discharge of their domestic duties. It is also very often met with in the upper classes of life, where the susceptibility to nervous excitement is morbidly increased by fashionable habits. I shall not enter into the various moral causes which tend to produce this state of the nervous system, and will content myself for the present with giving you some hints for the treatment of this obscure affection. As yet I have not any distinct and accurate notions of the disease, and can only guess at the treatment, but this much I may state, that such cases are not to be cured by the means which I have already detailed. If they are to be cured by any means, I think it is by antispasmodics, and remedies which have a gently stimulant, and, if I may so express myself, alterative effect on the nervous system. I have cured two cases of this kind by musk and assafœtida, where every other remedy had failed. To one of these I was called by my friend, Dr. Neason Adams; the patient was a lady of delicate constitution and hysterical habit; she was emaciated, and suffered from a total loss of rest, but had no other disease. All kinds of narcotics had been tried unsuccessfully, and opium in all its forms had failed in procuring sleep. I advised the use of musk in doses of a

grain every second hour, and this means proved eminently successful. In another case I succeeded by administering the same remedy in combination with assafœtida. I have also remarked that assafœtida alone, given in doses of two or three grains three times a-day, has very considerable effect in calming nervous irritation of this description, and restoring the patient to the enjoyment of more prolonged and refreshing sleep. In all such cases the physician must be most careful to have the appearance of not thinking the loss of sleep as a matter of much consequence, and the family of the patient must be directed to speak as little about the matter in his presence as possible;—nay, so powerful is the operation of moral impressions, that in one case which I attended along with Mr. Halahan, I succeeded in procuring sleep by ordering a musk pill to be given every second hour night and day, and by desiring the patient to be awakened, should she be asleep, at the time the pill was to be taken. I laid great stress on the importance of so proceeding, and thereby produced so strong an effect on the patient's mind, and inspired so great a confidence in the efficacy of the medicine, that she went to bed, not so much afraid of lying awake as afraid of being asleep at the hours when she ought to take a pill. The idea which had hitherto fixedly occupied her mind was displaced by a new impression, and relief was obtained the very first night.

To conclude, gentlemen, I may observe that sleeplessness in a chronic form is often produced by dyspepsia, and can only be relieved by the means suited to indigestion. Here it is that small doses of blue pill and tonic purgatives are of infinite service, combined with change of air, of scene, and an appropriate diet. In many females, sleeplessness is combined with menstrual irregularity, and can only be cured by means calculated to invigorate the health and restore the catamenial discharge to its natural periods and quantity, for the nervous system suffers equally whether they be suppressed or overabundant. It is singular how long sleeplessness often continues in chlorosis without inducing those serious consequences that are produced by this symptom in other morbid states of the system. In such cases much is sometimes accomplished by means of the common preparations of morphia, or by the use of Hoffman's liquor (liquor æthereus oleosus), camphor, and other medicines that act upon the nervous system. It must be confessed, however, that these and every other expedient to obtain sleep often fail in chlorotic and hysterical females, in whom relief is only obtained by a gradual improvement of the general health and menstrual function.—*London Med. and Surg. Journal*, 21*st March*, 1835.

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30. *On the use and abuse of cold applications.* By Robert J. Graves, M. D.—In affections of the head occurring in acute diseases, and attended with raving and loss of rest, it is a very usual practice to direct the application of cold lotions to the shaved scalp.

Permit me, gentlemen, to make a few remarks upon this important subject. I wish I could make myself well understood on this point, for I have seldom met with any person who seemed to bear in mind the true principle upon which cold is applied as a means of repressing local heat. In cases of determination of blood to the head occurring in fever, the common practice is to have the head shaved and cold lotions applied. Enter the room of a patient who is using cold applications, and you will observe the process conducted with great apparent nicety; the head is accurately shaved and carefully covered with folds of linen wet with a lotion to which spirit of rosemary or some odoriferous tincture has communicated an agreeable and refreshing smell; but when you come to examine the patient, you find his head smoking and the heat of his scalp increased. The nurse applies the lotion once every half hour, or perhaps not so often; indeed, she seldom repeats the application until her notice is attracted by the steam rising from the patient's head, or until she herself, awaking from a comfortable sleep, and going over to examine the state of the patient's head, finds the folds of linen which cover it as hot and dry as if they had been hung before a fire. Whether applied to reduce local inflammation in any part of the body, or to cool the scalp in determination to the head, cold lotions as ordinarily employed do infinitely more harm than good. The cold is applied at distant intervals, its effect soon ceases, and reaction constantly takes place, leaving the part as hot or even hotter than it was before.

If you put your hand into snow for a few moments, and then take it out, it quickly resumes its natural heat; and if you repeat this at considerable intervals, so as to give time for reaction to occur, the vessels assume a more energetic action, and it becomes hot and burning. If you continue to keep it in the snow for a long time, its heat becomes completely exhausted, reaction does not take place until after a considerable period, and very slowly, and the hand remains at a very low temperature for a good while. Bear this in mind, for it will direct you in the application of cold to reduce local heat. If cold applications be used at such intervals as to allow the scalp to react and resume its heat, rely upon it, it is much better to forbid them altogether. Where you wish to apply cold with effect, let it be done by relays of folded linen, wet with any frigorific mixture, and repeatedly applied to the scalp so as to leave no smoking, or, what is much better, get three or four bladders, put into each a quantity of pounded ice, and apply one over the crown of the head, one on each side, and lay one on the pillow for the back of the head to rest on.

There is a vast difference between a thing being done and its being well done, so it is with regard to cold lotions; so difficult is it to ensure their proper application, that I have entirely given them up in hospital practice, and rarely order them in private. I have been induced to abandon them in consequence of witnessing so many instances in which my directions were neglected, and consequently the cerebral congestion was augmented by their mal-application. Another serious inconvenience frequently arises from their use when applied in a slovenly manner, which is the danger of cold arising from the pillow and bed-clothes being wetted.

It is a curious fact that the head is the only one of the three cavities with respect to which long established custom has laid down the maxim, that when its contents are inflamed we may cool the surface over it, while, in inflammatory affections of the thoracic or abdominal viscera, this practice is avoided as dangerous and inapplicable. Latterly, however, some medical men have been inclined to question the grounds on which cold applications have been rejected in the two latter cases, and some have even declared that they have used ice poultices in inflammations of the chest and belly with great success and perfect safety. I am not as yet prepared to adopt this practice, although I must confess that a review of the subject might incline me to give up my prejudices on this point. It is certainly but reasonable to think that what is true of the one may be also true of the other, and that the application of cold to the head and heat to the chest and belly has nothing in its favour beyond mere custom. It should be recollected, however, that the head and face are more accustomed to cold than the chest and belly, and hence are less liable to any mischief likely to arise from its application in an intense degree. Still I am inclined to think that there is much prejudice connected with the practice of applying cold to the head; and I have very little doubt that if the matter was properly investigated, and a number of experiments made, it would lead to the abandonment of cold applications in most inflammatory diseases of the brain. In fevers, I can say positively that in the majority of cases they are positively injurious, *as usually applied;* sponging the bare scalp with tepid or warm vinegar and water, or *even frequently repeated steeping of the head and temples* will often succeed much better in abating the head-ache and restlessness of fever than any cold applications whatsoever. In 1832, a violent influenza, accompanied by most distressing head-ache, attacked thousands in Dublin; this intense pain in the head was relieved by nothing so effectually as by diligent steeping of the temples, forehead, occiput, and nape of the neck *with water as hot as could be borne.*

I do not speak here of the application of cold to the head, for the purpose of relieving local heat and inflammation, but to produce an effect on the whole system. Cold thus applied is of decided and unequivocal value. You are aware that in cases of fever accompanied by symptoms of high mental excitement and great heat of skin, the use of cold dashing has produced the most extraordinary effects. Again, if a patient has taken too large a dose of prussic acid or any other narcotic, the best mode of rousing him is by pouring water on his face or chest from a height. In Turkey, if a person happens to fall asleep in the neighbourhood of a poppy field, and the wind blows over it towards him, he becomes gradually narcotised, and would die, if the country people who are well acquainted with this circumstance did not bring him to the next well or stream, and empty pitcher after

pitcher on his face and body. This occurred to my friend, Dr. Oppenheim, during his residence in Turkey, and he owes his life to this simple but effectual treatment.—*Ibid.*

31. *Treatment of Amenorrhœa and the Uterine Pains which precede and accompany Menstruation, by Carbonic Acid Gas.* By Prof. Mojon.—It is well known that females in general, without being attacked by complete amenorrhœa, suffer great pain both immediately before and during menstruation. Various medicaments have been tried in remedy of this suffering, many of which increase it by over excitation of the nerves. M. Mojon proposes, therefore, the use of carbonic acid gas, which he considers an excellent antiphlogistic, in opposition to a great number of medical practitioners, who regard it as a stimulant. Fumigations of this gas may be also advantageously employed in cystitis, ophthalmia, and other local inflammations. This therapeutic agent not only acts on the blood in diminishing its thickness, but also on the solids in relaxing the fibrous system to prostration and torpor.

The gas is disengaged from calcareous carbonate by means of weakened hydrochlorine acid, and must be conveyed into the vagina through the orifice of an Indian-rubber pipe. These fumigations should be repeated twice a-day before menstruation, and they are found not only to regulate the course, but entirely to relieve the pains which precede, accompany, and follow menstruation. The operation may be hastened with the ordinary apparatus, by the addition of a spigoted bladder, filled with the gas and adjusted over the Indian-rubber pipe, the spigot being turned, a slight pressure on the bladder throws a current of gas into the vagina.—*Lond. Med. and Surg. Journ.* March 28, 1835.

32. *On some points connected with the Treatment of Fever*, by Robert J. Graves. Extracted from a clinical lecture delivered at the Meath Hospital, Dublin. I beg leave, gentlemen, to draw your attention to-day to some points connected with the treatment of fever. The number of fever cases we have had of late, is much greater than for some years; and to those who are anxious to acquire a knowledge of the phenomena and character of one of the most interesting and important of human maladies, our wards furnish at present very ample opportunities. I trust every gentleman who listens to me will avail himself of such advantages, and not permit opportunities of acquiring valuable information to pass away unprofitably. It is my duty to speak of the particular modes of treatment adapted to fever cases, to inform you how each symptom may be most successfully combatted, and to lay down rules for your guidance in each particular emergency; it will be your business to collect and arrange the detached materials, and form your general principles with respect to the management of this very important disease. It has never been my wish to speak generally of the nature or treatment of fever; time will not permit me, nor do I wish to encroach on the province of those who lecture on the practice of physic; my object is merely to note symptoms as they rise, to speak of their nature and treatment, to confine myself to detached observations, and, as far as lies in my power, to contribute facts to those who write or lecture on practical medicine.

A woman has been admitted lately, who had been labouring under fever for a considerable time before she came into the hospital. This poor creature seems to have been in very miserable circumstances during her illness; her bedding must have been totally neglected, and no attention paid to cleanliness, for on her admission, though nearly free from fever, she was covered with bed sores to a frightful extent. Almost every point which had been subjected to pressure had ulcerated, and the ulcers went on undermining the skin, and committing terrible devastation in the cellular substance. Cases like this require great care and unremitting attention; it is on the exercise of an active and untiring humanity that the cure will mainly depend. In the first place, you are to recollect that the efforts of the constitution towards the re-establishment of health are impeded by the irritation of the sores; sleep is prevented, and the patient kept in a state of continual suffering, while a constant drain from the system is kept up by the ulcerative discharge, adding to the amount of existing debility. Hence a pseudo-febrile state arises, characterized by quick pulse, restlessness, and want of sleep, somewhat akin to that which is produced by scrofulous irritation. The appear-

ance, however, of general excitement of the system, should never prevent the physician from adopting every mode of strengthening the patient as much as possible. You will not succeed in removing this condition by an antiphlogistic regimen; the patient requires tonics and narcotics, with a nutritious but not stimulating diet. If you put him on a low regimen, and give antifebrile medicines, you will do mischief; you will increase the existing debility, and add to the source of febrile excitement. Your practice should be to prescribe a nutritious diet, wine, and the sulphate of quinine, and to treat the sores with stimulant applications. The local application which we found most beneficial in such cases is one composed of two ounces of castor oil, and one of balsam of Peru, which is to be applied on pledgets of lint, and covered with a poultice of linseed meal two or three times a day. In addition to this, we direct the sores to be washed night and morning with a solution of chloride of soda, in the proportion of twenty or thirty drops of the saturated solution to an ounce of water. We also direct the patient to lie occasionally on her face, and enforce the strictest attention to cleanliness on the part of the nurse. Dr. Arnott's hydrostatic bed is an excellent adjuvant in the treatment of this disease, but unfortunately the one we have is at present out of order.

Such then, gentlemen, is our mode of treatment. We order the patient nourishing, but not heating, food; we give wine, regulating its quantity according to its effects on the system, and the liking of the patient; we prescribe small doses of the sulphate of quinine, and administer an opiate at night to allay irritability, and procure sleep. The local treatment consists in the use of stimulant and detergent applications, poultices, attention to cleanliness, and change of position.

With respect to the present epidemic fever, we have now seen so many instances of its direct communication from one patient to another in our wards, that we are induced to believe it to be contagious. From the great number of applicants labouring under serious and theatening diseases, we are sometimes obliged to put into our fever wards, patients affected with local inflammations accompanied by symptomatic inflammatory fever; several of these, while recovering, have been attacked with symptoms of the present epidemic. A man was admitted last week into the fever ward with violent pneumonia; the right lung was extensively hepatised, and in addition to this, the pleura was found to be engorged over a large portion of its surface. The case was one of extreme distress, and the state of the patient apparently hopeless; however, by appropriate depletion, assisted by mercury and blisters, convalescence became established, and the pulmonary symptoms were rapidly subsiding. His system was still under the influence of mercury, his fever had disappeared, his dyspnœa was relieved, his cough and all the other symptoms nearly gone, when he was suddenly attacked with fever, and that of the same character as prevailed among the patients in the same ward. This is, I believe, the sixth or seventh case, in which patients labouring under some other form of disease, have been seized with symptoms of the present epidemic, while lying in the same ward with fever patients. I have thought it necessary to make this observation, because you will find it asserted in medical works and by physicians of considerable eminence, that in hospitals fever does not spread from one patient to another, and that where it does appear among many individuals in the same house, its spread is chiefly favoured by want of cleanliness and proper ventilation. This, however, we can state to be the fact, that fever will spread among patients in the same ward, independent of anything connected with filth or foul air, for we have seen it occur in our wards, which I can assert are kept as clean and as well ventilated as any in the kingdom.

There is one circumstance connected with this case worthy of remark, with reference to the supposed antifebrile properties of mercury. It has been stated that mercury exercises a prophylactic influence over the system, and several persons who have cultivated medicine with success, but particularly some army surgeons of high authority, have asserted that the use of mercury not only cures fever, but also secures against it. I am afraid that in this and other cases mercury has more credit than it deserves. In speaking of cholera on a former occasion, I have told you that I had seen persons under the influence of mercury take cholera and die of it; and here we find a man whose mouth is still sore, in whom salivation had not ceased, getting an attack of fever at a time when he had just

recovered from another disease. This shows that mercury is not to be looked upon as a prophylactic in cases of fever of a contagious nature. We cannot always cure or prevent fever with mercury; on the contrary, where fever of a particular kind is present, it prevents the constitution from yielding to its influence. Thus in a case of hectic fever, brought on by suppuration of the liver, it has been found impossible to bring the system under the influence of mercury.

I come now, gentlemen, to speak of a matter of great importance in the treatment of fever,—I allude to the indications for exhibiting and the mode of giving tartar emetic at different periods of the continued fever of this country. For some time I have been in the habit of employing tartar emetic with very remarkable success at various periods of fever, but principally towards its termination. I am therefore anxious to lay before you a brief statement of my experience of this admirable remedy, and I shall take leave to illustrate this by a reference to several very remarkable cases in which its administration was followed by the most decided and satisfactory results.

You are all aware that tartar emetic has been long and justly valued by the profession for its manifold and energetic properties. Without referring to its importance in the treatment of pulmonary diseases, and almost every form of local inflammation, I may observe, with respect to our present subject, that tartar emetic in small portions, dissolved in a quantity of whey or water, has been for a considerable time a popular and successful remedy in the commencement of febrile symptoms. Whether it is by its action on the stomach and intestinal canal, or by producing diaphoresis, or by some peculiar influence on the nervous and circulating systems, that it produces its favourable effects, we cannot exactly say; but we know that it frequently succeeds in cutting short or removing febrile symptoms. All these matters are, however, sufficiently well known to every student, and require no comment.

In a preceding lecture, when speaking of the best means of procuring sleep in various forms of acute disease, I alluded to the peculiar narcotic power of the preparations of antimony, and dwelt on the benefits derived from a combination of antimonials with those medicines which are strictly termed narcotics. I told you in that lecture, that the good effects of tartar emetic in delirium tremens seem to be totally independent of its action on the stomach; for we had witnessed those effects when it had not excited either nausea or vomiting. I referred also to many instances of delirium tremens, in which opium in every form had failed in procuring sleep, and where a combination of tartar emetic and laudanum had succeeded in tranquillizing the patient, and producing sound, refreshing sleep. Bearing this important fact in mind, we shall proceed to an examination of the circumstances which require the use of tartar emetic in fever.

There is a particular stage in one form of fever, and that exceedingly dangerous and threatening, in which I have derived most signal benefit from the use of this remedy. A patient, suppose, gets an attack of fever, he has all the ordinary symptoms, as thirst, restlessness, heat of skin, quick pulse, and head-ache. You are called in about the third or fourth day, and find that he has all the symptoms I have mentioned still present; his face is flushed, his head aching, his pulse from 100 to 110, but not remarkably strong; you find also that he has been sweating profusely from the commencement of his illness, but without any proportionate relief to his symptoms, and that he is restless and watchful. You are informed that his perspirations are so great that his linen has to be changed frequently in the day, and that, notwithstanding this, the pulse has not come down, the head-ache is undiminished, and the patient has become more and more sleepless. Here comes a very important practical question, namely,—How are you to treat such a case? The patient has no epigastric tenderness, no cough, no sign of local disease in either the thoracic or abdominal cavities; he has been purged, used diaphoretics, and perhaps mercurials; every attention has been paid to regimen, ventilation, and cleanliness; but still he lies there in a state of undiminished febrile excitement, with persistent head-ache, quickness of pulse, and sleeplessness.

In such a case as this you have nothing to expect from the sweating; it will never produce any relief. I was called some time back to see a young gentleman in fever, who was placed in similar circumstances to those which I have just detailed. It was about the sixth day of his fever, and I found him with a pulse of about 110, with considerable restlessness and head-ache, and was informed that

he had perspired profusely from the commencement of his illness. On hinting the necessity of more active treatment than that which had been employed, his physicians appealed to the perspirations as decidedly contra-indicating depletion. They said that the profuse sweating pointed out the impropriety of active measures, and that it was a symptom which would be speedily followed by relief. I was convinced that they had taken a wrong view of the case, and stated as my opinion that nothing was to be expected from the perspiration; that when co-existing with a persistent febrile condition of the system, when accompanied by quick pulse, head-ache, and restlessness, perspirations always indicated the necessity for antiphlogistic measures, and in particular for the use of the lancet. I instanced the case of patients labouring under arthritis with profuse perspirations not accompanied by relief, and said that it was well known that such cases were most successfully treated by a full bleeding from the arm. I accordingly stated, that although the disease was of five or six days' standing, and the pulse not very strong, I would advise immediate bleeding. Sixteen ounces of blood were therefore abstracted, with some relief to the patient, and without increasing his debility; and it was then a question what further steps were to be taken. The young gentleman had been actively purged; he had no cough or abdominal tenderness; his symptoms were head-ache, sweating, and sleeplessness; and to these, nervous agitation had now become superadded. I proposed here what surprised my colleagues very much, and this was, to give our patient large doses of tartar emetic. They said the practice was very strange, but consented to give it a trial, on laying before them the reasons which induced me to prescribe it. I said, that in such cases the tartar emetic forming as it were a part of the antiphlogistic treatment, which commenced with general bleeding, would have a tendency to cut short instead of increasing the perspiration, by reducing the inflammatory state of the system on which it depended. The reasoning seemed rather paradoxical,—nevertheless it turned out to be correct. I ordered the tartar emetic to be taken in the quantity and mode in which it is generally prescribed in acute pneumonia: that is to say, six grains of tartar emetic combined with a little mucilage and cinnamon-water in an eight ounce mixture, to be taken in the course of twenty-four hours. After taking five or six grains, the sweating began to diminish; on the second day he scarcely perspired any, and his head-ache was greatly relieved; he began to improve rapidly in every respect, sleep returned, nervous agitation ceased, and convalescence became soon established.

The next case in which I employed tartar emetic with signal benefit, was one of a very insidious character, as many of them are at present; they exhibit no prominent or alarming symptoms, and yet continue to run on day after day without any tendency to crisis. The gentleman who was the subject of this case got an attack of fever unaccompanied by any remarkable peculiarity, except that he was very nervous, and alarmed about his situation. His fever went on day after day without any decided symptom; he had no distressing head-ache, no cough, little or no abdominal tenderness; there was no vomiting or diarrhœa; and his pulse was not much above the natural standard. He had been leeched over the stomach at the suggestion of some medical friends, but this was done rather by the way of precaution than for the purpose of combatting any actual disease. About the eighth or ninth day the pulse began to rise; he complained of head-ache, and became restless and watchful. On the eleventh day the head-ache had greatly increased, he was in a state of great nervous excitement, and had not closed an eye for the two preceding days and nights. This state of insomnia and nervous agitation was immediately followed by violent paroxysms of delirium; his eyes, never closed in sleep, wandered from object to object with unmeaning restlessness; his limbs were in a state of constant jactitation, and he raved incessantly: his voice being occasionally loud and menacing, at other times low and muttering. His friends became exceedingly alarmed, and every remedy which art could suggest was tried:—his head was shaved, and leeched until they could leech no longer; cold lotions were kept constantly applied with unremitting diligence, and he was purged freely and repeatedly. At this period, that is to say, about the eleventh day of the fever, I was requested by this gentleman's medical friends to visit him. On examining the patient, I found that he was constantly making violent efforts to rise from his bed, and that he had a great deal of the expression of countenance which belongs to a maniacal patient. Under these cir-

cumstances, I advised the use of large doses of tartar emetic, in the mode already detailed, except that, in this case, in consequence of the violence of the delirium, I ordered the quantity prescribed for a dose to be taken every hour instead of every second hour. The patient took about ten or twelve grains during the course of the night, and next day his delirium had almost completely subsided. Under the use of the remedy he became quite calm, fell into a sound sleep, and began to recover rapidly.

In the two preceding cases, gentlemen, I was guided by ordinary principles, recognised by all physicians, and according to which the exhibition of tartar emetic is recommended in fever whenever there is undoubted evidence of determination of blood to the head, producing head-ache, loss of sleep, and delirium. In the cases which follow, tartar emetic was exhibited at a period of fever, and under circumstances that were, with respect to the exhibition of this remedy, not less novel than important. The principles which led me to this practice have been long established, but, nevertheless, the practice is entirely new, and (I say it with pride, for it has already been the means of saving many valuable lives), it is entirely my own.

Shortly after the commencement of our present session, Mr. Cookson, a pupil at this hospital, and remarkable for his diligent attention to clinical pursuits, caught fever while attending our wards, in which many cases of the present epidemic were then under treatment. His fever was of an insidious nature, not characterized by any prominent symptom, not exhibiting any local disease to combat, or any tendency to crisis. For the first seven or eight days, with the exception of head-ache, which was much relieved by leeching, he seemed to be going on very well; his skin was not remarkably hot; he had no great thirst, nausea, or abdominal tenderness; his pulse was only 85; and he had sweating, which was followed by some relief. About the eighth or ninth day the pulse rose, and he began to exhibit symptoms of an hysteric character. Now, in every case of fever, where symptoms resembling those of hysteria come on, you should be apprehensive of danger. I do not recollect having ever met with a single case of this kind which did not terminate in nervous symptoms of the most formidable nature. I prescribed at the time the usual antihysteric medicines, but without any hope of doing good, knowing that these symptoms were only precursory to something worse. I also, as a precautionary measure, had leeches applied to his head. The fever went on, the head-ache became more intense, he grew nervous and sleepless, and fell into a state of great debility. On the fourteenth day of fever his tongue was black and parched, his belly tympanitic; he was passing every thing under him unconsciously; he had been raving for the last four days, constantly attempting to get out of bed, and had not slept a single hour for five days and nights. Dr. Stokes, with his usual kindness, gave me the benefit of his advice and assistance at this stage of Mr. Cookson's illness, and we tried every remedy which experience could suggest. Blisters were applied to the nape of the neck, the head was kept cool by refrigerant lotions, the state of the belly attended to, and, as we perceived that the absence of sleep was a most prominent and distressing symptom, we were induced to venture on the cautious use of opium. It was first given in the form of hydrarg. c. cretâ, with Dover's powder, with the view of relieving the abdominal symptoms as well as procuring sleep. This failing in producing the desired effect, we gave opium in the form of enema, knowing its great power in the delirium which follows wounds and other injuries. This was equally unsuccessful with the former. He still was perfectly sleepless. We came again in the evening, and, as a last resource, prescribed a full dose of black drop, and left him with the conviction, that if this failed he had no chance of life. On visiting him next morning at an early hour, we were highly mortified to find that our prescription had been completely unsuccessful; he had been more restless and delirious than ever. Here was the state in which we found him on entering his chamber at eight o'clock in the morning on the 15th day of his fever. He had universal tremors and subsultus tendinum, his eye was suffused and restless, he had been lying for some days entirely on his back, his tongue was dry and black, his belly tympanitic, his pulse 140, quick and thready, his delirium was chiefly exhibited in short broken sentences and in a subdued tone of voice, and it was now eight days and nights since he had slept. Here arose a question of great practical importance. How the nervous agitation was to be calmed and sleep pro-

duced? Blisters to the nape of the neck, cold applications, and purgatives had failed; opium in various forms had been tried without the slightest benefit; if sleep were not speedily obtained he was lost. At this emergency a mode of giving opium occurred to me which I had never thought of before. Recollect what his symptoms were at this period: quick failing pulse, black, dry, tremulous tongue, great tympanitis, excessive prostration of strength, subsultus tendinum, extreme nervous agitation, constant muttering, low delirium, and total sleeplessness. I said to Dr. Stokes that I wished to try what effects might result from a combination of tartar emetic and opium; I mentioned that I had given it in cases of delirium tremens with remarkable success, and thought it worthy of trial under the circumstances then present. Dr. Stokes stated in reply, that he knew nothing with respect to such a combination, as adapted to the case in question, that he had no experience to guide him, but that he would yield to my suggestion. We therefore prescribed a combination of tartar emetic and laudanum in the following form, which is that in which I generally employ these remedies in the treatment of delirium tremens. ℞. Antimonii tartarizati grana quatuor, tinct. opii. drachmam, misturæ camphoræ, ℥viij. Of this mixture, a table-spoonful to be taken every second hour. The success of this was almost magical. It is true that it vomited him; after taking the second dose he threw up a large quantity of bile, but it did him no harm. After the third or fourth dose he fell asleep, and awoke calm and refreshed; he began to improve rapidly, and soon recovered.

The next case to which I shall direct your attention is that of Mr. Stephenson, a pupil of Mr. Parr of this hospital. This young gentleman, as many of you will recollect, was attacked with fever about the middle of January. On Thursday evening he complained of languor and malaise, and on the following day felt himself feverish, but without any prominent or decided symptom. At night he took a dose of calomel and antimonial powder, which had no sensible effect, and the following day complained of shivering, violent head-ache, pain in the back, thirst, prostration of strength, and sleeplessness. He was ordered to take a combination of tartar emetic and nitrate of potash in camphor mixture, which produced a few loose stools and some diaphoresis; but in consequence of its effect on the stomach, and his complaining much of thirst and epigastric tenderness, the tartar emetic was omitted and effervescing draughts prescribed. Two days afterwards, the epigastic tenderness still continuing, twelve leeches were applied over the pit of the stomach, followed by blister, which gave relief, and the bowels were kept open by enemata. He commenced a second time the use of the tartar emetic and nitrate of potash, with the addition of five drops of tincture of opium to each dose, but was obliged to give it up again in consequence of the increase in his gastric symptoms. He now became exceedingly restless, and his delirium began to assume a very intense character. Leeches were applied behind the ears, his head shaved and his temples blistered; he had also a large blister over the abdomen, which gave him considerable relief, but the cerebral and nervous symptoms became much worse. The delirium went on increasing, accompanied by subsultus tendinum, and picking the bed-clothes; he was perfectly sleepless, raved incessantly, and had to be kept down in bed by force. On the 17th day of his fever he was in the following condition,—tongue brown and rather dry, no remarkable thirst or abdominal tenderness, eyes red and ferrety, no sleep for five nights, constant muttering and delirium (which had now assumed the character of delirium tremens), subsultus tendinum and jactitation extreme, urine and fæces passed under him unconsciously. I directed the combination of tartar emetic and laudanum to be immediatly given, carefully watching its effects. He had only taken two doses when a degree of calmness set in, bringing with it relief to all his symptoms, and before a third dose could be administered, he fell into a profound sleep, from which he awoke rational and refreshed. The mixture was continued every four hours with increasing benefit, he slept long and soundly, and began to improve in every respect. On the second day after he had begun to use the tartar emetic, he took a little porter, which was changed the next day for claret and chicken broth. In about a week he was able to sit up in bed, and seven days afterwards was able to leave the hospital and go to the country for change of air.

The last case to which I shall direct your attention is that of Mr. Knott, also a pupil of this hospital, a gentleman remarkable for his unremitting attention to clinical pursuits, and from whom I derived much valuable assistance in conduct-

ing various post-mortem examinations. This gentleman was attacked with fever about the latter part of January, which went on for some time without any particular symptom, except considerable restlessness and nervous excitement. He then became perfectly sleepless, complained of violent head-ache and thirst, raved, and became exceedingly irritable. Opium in various forms and repeated doses, either alone, or combined with musk and camphor, totally failed in producing sleep, and his condition became daily worse. On the 13th day he was in a very dangerous condition; his nervous agitation had risen to an alarming height, and for many days and nights he had never closed an eye. At this period it appeared obvious that if something were not done to calm nervous excitement and restore sleep, he had but little chance of life. Under these circumstances I proposed to my friend, Dr. M'Adam, who attended with me, to give tartar emetic and opium. After he had taken about three table-spoonsful, he had a copious bilious evacuation, and immediately afterwards fell into a sound sleep, during which he perspired profusely, and awoke in about twelve hours, with every bad symptom gone. The nervous irritability was completely allayed; his thirst and head-ache relieved; his tongue moist and cleaning; and his reason quite restored. From that period every thing went on favourably, and he rapidly regained his health and strength.

Since the foregoing lecture was delivered, I have met with several cases of fever, in which I employed the tartar emetic and opium, with the same remarkable success. A man named Christopher Nowlan was admitted into Sir P. Dun's Hospital, on the 3d of February last, labouring under fever. He had been ill ten days, had raving, subsultus tendinum, and appeared unable or unwilling to answer questions. His wife stated that he had diarrhœa for the preceding three days, and that he dozed occasionally, but never slept. He appeared exceedingly low and prostrated, and lay constantly on his back. A succession of flying blisters were ordered to be applied to the chest and stomach, and wine and chicken broth prescribed. He also got the following draught every third hour:—℞. Mist. camphoræ, ℥j.; Spirit. ætheris oleosi, ℥ss.; Spirit. ammoniæ aromaticæ, ℥ss.; Moschi, gr. viij. Misce. Under the use of these remedies he began to recover from his prostration, but as the sleeplessness and delirium still continued, I ordered him to take the tartar emetic mixture in the usual way. It produced at first two or three full discharges from the bowels, and after he had taken the fourth dose he fell into a sound sleep, from which he awoke much better, and soon became convalescent.

In the case of a patient named Michael Murray, who exhibited the same remarkable nervous irritability and sleeplessness, this remedy was also employed with very striking effects. This man had been ill of fever for ten days before his admission into Sir Patrick Dun's Hospital, and appeared so much prostrated, that I ordered him arrow-root, with beer. He raved a little on the night of his admission, and remained without closing an eye until morning. The same symptoms were observed on the following day, and his nervous irritability became increased. On the 14th of February he had been five days in the hospital, and had not enjoyed a single hour's sleep. I ordered the tartar emetic mixture to be given: three doses produced sleep: he had no other bad symptoms, and recovered completely.

In another very bad case of maculated fever, the same results were obtained. The patient, Mary Farmin, had got an attack of fever after a fright. She had been eight days ill, at the date of her admission, February 25th. She had irregular pulse, sleeplessness, head-ache, and suffusion of the eyes; moaned and sighed continually, and appeared greatly prostrated. She was blistered, had fœtid enemata, and took the chloride of soda internally with some benefit; but the sleeplessness and nervous excitement continued. In this case, though the tartar emetic was not followed by speedy convalescence, still it produced remarkably good effects; after taking four doses of it, she fell asleep, and did not awake until next morning.

There are many other cases which I could adduce to prove the value of a combination of tartar emetic and opium in the nervous sleeplessness of low fever; the foregoing, however, I trust will be found sufficient.

I forgot to observe, that all the cases I have spoken of as successfully treated by means of tartar emetic combined with opium, in the advanced stage of the dis-

ease, were cases of maculated or spotted fever. I shall take a future opportunity of entering more fully into a detail of its symptoms.—*Lond. Med. and Surg. Journal, May*, 1835.

33. *Treatment of Mercurial Salivation by concentrated Muriatic Acid.*—M. VELPEAU is of opinion that mercurial salivation is connected with some alteration of the mucous cryptæ in the mouth and not with inflammation of the salivary glands, for he remarks, "when a gland is inflamed it no longer secretes: besides which, the patients do not refer the pain they feel to the glands, but to the interior of the mouth.

"What is the progress and effects of mercury? By its extreme subtlety it is introduced into the system, saturates it as it were and inflames it; for most generally the gums, the internal lining of the cheeks, the edges of the tongue are covered with a thick layer of lymph, and this is most probably owing to an irritation, generated either by sympathy or continuity, and it is therefore essential to look to the cryptæ rather than the glands. This view of the subject induced M. Berard to make use of muriatic acid, and myself to employ it alternately with a mixture of honey, the acid in question, solution of lunar caustic, and several other remedies. For the last two years I have returned to the use of the acid, but I now prescribe it in the pure or even concentrated state. In a patient who had been labouring under severe ptyalism for four days, and to whom I applied the acid by means of a hair brush pencil, the good effects were immediate. I was afraid, however, lest it should produce mischief, but was deceived: a pellicle forms over the mouth, but there is no inflammation. Of three patients treated with concentrated muriatic acid, one has left the hospital: of the two remaining the second recovered in a few days. In these cases the patients were touched with the remedy four times in two days, and this sufficed. In the third patient the inflammation was less acute, and the effects less marked: moreover, the salivation was of some standing; from all which it may be inferred that the muriatic acid is beneficial in proportion to the intensity of the inflammation. To this patient, therefore, I applied alum, and the symptoms were almost directly ameliorated; alum, however, to be useful, should be used in substance, and in large quantities."—*Lancette Française, 2nd June.*

## OPHTHALMOLOGY.

34. *Purulent Ophthalmia of Infants.*—Dr. EVORY KENNEDY laid before the Medical Section of the British Association at the meeting in Dublin some interesting observations on this subject. Dr. Kennedy said that the object of his communication was merely to illustrate some disputed points in practice; on such a subject nothing new or original was to be expected. Purulent ophthalmia was of very frequent occurrence; many cases of it were to be met with in lying-in-hospitals; it was a disease of a violent character, and perhaps caused more blindness than any other affection of the eye. He did not intend to enter into the history of the disease, nor would he stop to examine the question as to its phlegmonous or erysipelatous nature. A great deal of difficulty attended the investigation of the origin of purulent ophthalmia, as connected with a specific virus. As far as his experience went, the proportion of cases which could be distinctly referred to gonorrhœa, or to the leucorrheal discharge, was very small. He had, however, observed that ophthalmia, generated in this way, was of a bad and obstinate character; five of the worst cases he had seen had been produced by infection, and in one of these there was extensive sloughing of the cornea. The disease was observed in the lying-in hospital to commence either immediately after birth, or in a few days afterwards. It was also seen to follow exposure to cold and irritants, a circumstance which goes to prove, that irritation, whether specific or not, may produce it. Viewed without reference to any theory, the disease seemed to consist in a violent and rapid inflammation, speedily followed by a copious secretion from the diseased part. A very remarkable change took place in the secretion of the conjunctiva; this, however, was not peculiar to that

membrane; an analogous change was frequently observed in certain affections of the mucous membrane of the genito-urinary and respiratory systems.

With respect to the treatment of purulent ophthalmia in children much difference prevailed. Some treated it with sedatives, others with stimulants; a third class restricted the use of sedatives to the early stage of the disease, and then had recourse to stimulants and astringents. He would proceed to state those means which he had found most efficient. One of the first and most necessary steps in the treatment was the application of leeches. One of these was applied to the inflamed lid, or to the temple in the immediate vicinity of the eye; the former situation was, however, generally preferred. Dr. Kennedy had never seen any inconvenient or alarming hæmorrhage from the use of leeches under such circumstances, and conceived that the extravasation of blood in the loose cellular tissue of the lids might, by its pressure, have some effect in preventing the hæmorrhage. In bad cases, where the inflammatory symptoms ran high with copious purulent discharge, and a tendency to eversion of the lids, the leech was applied a second or even a third time, or oftener. Leeching was not found necessary in all cases; in the milder ones, fomentations, alterative aperients, and the use of a solution of nitrate of silver, removed the disease in two or three days. With respect to leeching, he had to observe that he had never seen any of the bad effects attributed to it by some practitioners;—in some of the cases which he had under treatment, a leech had been applied four, five, or even six times to the same individual with benefit.

After leeching, the common practice is to have recourse to fomentations, aperients, and astringent collyria. Dr. Kennedy did not think this mode sufficient; to treat the disease with effect, it was necessary to produce an altered action in the diseased parts.—For this purpose nitrate of silver seems to be better adapted than any other substance; he had tried it extensively, and could bear ample testimony to its value. He had always employed a strong solution, having found that under five grains to the ounce, it produces little or no effect. Solutions, varying in strength from ten to twenty grains, or even half a drachm to the ounce, were applied to the eye, three or four times a day, and succeeded in effecting a cure, where weaker ones had failed. In some cases, the solid nitrate of silver was applied all over the inside of the lids. This was followed by considerable pain, and a puffing of the lids, which continued some hours after the operation, but was easily removed by sponging the eyes with cold water. In obstinate cases, besides leeching and the nitrate of silver, alterative aperients were employed. Scarification of the lids was not resorted to in any case, and Dr. Kennedy thinks, that in the early stage it is objectionable. A close and constant attention to cleanliness was found to be of the greatest use, and he had observed that those nurses, who were careless in washing the eyes of the children after birth, had the greatest number of cases in their wards. The foregoing treatment proved ineffectual, where attention to cleanliness had been neglected. His attention was drawn to this circumstance by observing, that all the cases which were under one particular nurse recovered rapidly, and cases which had been going on badly with others, began to improve when placed under her care. On inquiring into the cause of this, he found that this woman kept the child almost constantly in her lap, and removed the discharge with a soft sponge, as fast as it formed. This was also noticed in the convalescent cases. Where the children had been removed from the hospital, a slight discharge still continuing, they generally relapsed from neglect. The case of sloughing of the cornea was one of this description.

The success attending this practice was seen in the rapid subsidence of the disease. On the second or third day, the infant was able to open its eyes, and the worst cases yielded in ten days. Where the disease was protracted, owing to local or constitutional debility, the muriated tincture of iron was given in the breast milk, and occasionally the vinum opii was dropped into the eye.

Dr. Beatty said, that having the superintendence of a similar institution, he could confirm many of the foregoing statements.—With respect to a specific virus, he had observed, that in the great majority of cases he had been unable to trace the disease to such a source. With regard to treatment, his experience differed in some points from Dr. Kennedy's, particularly as regarded the application of leeches. He had been desirous of testing the merits of treatment, omitting the use of leeches, and had found that a recovery took place as certainly in those

cases where no leeches had been used as where they had been employed. In about twenty-five or thirty cases which had occurred at the lying-in hospital, in Cumberland-street, he had not used a single leech, and yet in no case had the disease terminated in blindness, nor was it ever found necessary to keep the child in hospital longer than ten days. Its treatment consisted at first in the use of cold applications to the eye, constantly repeated, and the use of alterative aperients, and afterwards of the saturated solution of the subacetate of lead, as recommended by Dr. Jacob. If no improvement followed the use of the liquor plumbi, in two or three days, he then had recourse to the solution of nitrate of silver, of the strength of ten grains to the ounce or more. He had found the five grain solution quite inefficient.

Mr. Byrne said, that in every case of purulent ophthalmia, which came under his notice, he had been able to trace it to infection. He had frequently applied the solid nitrate of silver to the conjunctiva, with great benefit; any swelling of the lids, arising from its application, could be removed easily by a poultice, made with bread soaked in cold water.

Dr. Collins stated, that he had been in the habit of applying a leech to the eyelid in case of purulent ophthalmia, and repeating it in six or eight hours afterwards if necessary. He seldom found more than two necessary to arrest the disease, and had recourse to the nitrate of silver on few occasions; but where he had used it he found it very serviceable. He had never observed any bad effects from the use of leeches.

Dr. Ireland said, with reference to the doctrine of a specific virus, that he had frequently met with the disease in cases where there could not be the slightest suspicion of the existence of gonorrhœa. As a proof that purulent ophthalmia may be caused by common irritants, he would mention that in a case which he had recently attended, the disease was produced by the nurse permitting a drop of proof spirit (which had been used in washing the child) to fall into the eye. With respect to leeches, he had used them on very many occasions, and had never observed any bad consequences to result from their application. He was in the habit of applying the leech to the conjunctiva lining the lower lid. After having reduced the inflammation by leeching he used the nitrate of silver solution in the proportion of a scruple to the ounce of distilled water, and would have no hesitation in using it of the strength of a drachm to the ounce, or even more. With respect to the duration of the disease, his experience differed from that of Dr. Kennedy and Dr. Beatty; the disease was seldom cured in less than ten days, and frequently lasted for a month or six weeks.—*Dublin Journal of Med. and Chem. Sc. Sept.* 1836.

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35. *On the advantages and disadvantages of operating for Cataract when only one Eye is affected.*—The following interesting observations by Mr. H. F. Brett, on this much vexed question, are deserving of attentive consideration; we take them from our cotemporary, the *India Journal of Medical Science.*

*Objection* 1st.—One eye being sufficient for the purposes of life, why therefore subject the patient to the pain and inconveniences attending the operation?

*Arguments in favour of Operating*—1st. When one eye is diseased, blindness must almost necessarily follow by the formation of cataract in the other eye. Ergo, it becomes necessary to anticipate the disease in the second eye, by endeavouring to restore the sight in the eye first attacked.—2nd. Many people have a strong as well as a weak eye, and the former more often becomes diseased.—3d. Obscurity from sympathy and habit, often results from a patient becoming blind of one eye; especially when first accidentally discovered by him on his closing the sound eye.—4th. The sphere of vision with one eye is considerably less than with two.

*Objection* 2nd.—Great inconvenience has occasionally resulted from confusion of vision, occasioned by the different refracting power of the two eyes, one possessing and the other not possessing the crystalline humour.

*Arguments in favour of Operating.*—1st. Confusion of vision is not always or even generally the result of the operation.—2nd. Supposing that confusion of vision generally did occur, the arguments in answer to the 1st objection would equally apply to this objection.—3d. Again, the extreme anxiety of the patient in the anticipation of the disease ensuing in the other, is a strong inducement for

operating.—4th. The length of time likewise for the patient to wait until he becomes blind in both eyes, seems a needless delay, and painful state of suspense, seeing the period may vary from a few months to many years.—5th. The diseased eye, favourable for operation, may become unfavourable, first, by accident, secondly, by inflammation of an acute or chronic character, adhesion to the Iris, &c. Amaurosis also sometimes follows from delay, and change in the consistence and volume of the lens produces sometimes internal inflammation, and also absorption of the vitreous humour which an early operation might have prevented.

*Objection* 3d.—An eye which has undergone an operation with every success, never obtains that perfection of vision which is possessed by a perfectly sound eye.

*Arguments in favour of Operating.*—Such imperfection is remedied by the employment of good glasses; and the question is not as to the patient being short-sighted, but as to his having any vision at all, seeing that the sound eye becomes generally blind. Moreover, the advantage of vision even with a glass, is preferable to blindness without, in that eye, in every respect.

*Objection* 4th.—When only one eye is affected, the operation has not such a brilliant effect, and the patient is seldom satisfied.

*Arguments in favour of Operating.*—1st. Such a consideration is not to be placed in opposition to the argument above adduced, and on the mind of an intelligent patient could have no weight.—2nd. It would not be a sufficient motive for the operator to be influenced by.

The above arguments would seem greatly to preponderate in favour of operating.

A few additional arguments in favour of operating may be adduced; but these are not of universal application, viz.

*Arguments in favour of Operating.*—1st. The patient may have originally laboured under short-sightedness (Myopia). Some of these patients see better with a good glass after the operation than they did before, or than with the other eye, especially if the Myopia had been caused by deficient convexity of the lens and not of the cornea, the lens being now removed.

2nd. Patients of an advanced period of life, who become affected with presbyopia, becoming affected with cataract, often see extremely well after the operation without the use of glasses.

3d. Beer and others are of opinion that from the great sympathy between the two eyes, the morbid action of the sound eye may be prevented by the removal of the complaint in the diseased eye. But satisfactory cases in illustration have not been adduced. It is contrary I should say, to general experience.

4th. The patient being young, a soldier, &c. are among the minor inducements for operating.

*Observations.*—The right eye is generally the strongest, and the left the weakest, as may be demonstrated by looking at two objects, at different distances, in the same straight line, with both eyes open, say the flame of a candle and the finger. On closing one eye, say the right, the finger will appear to move away from the straight line, and on again opening the right, and closing the opposite eye, the finger will not appear to move. The *strongest* eye seems generally to be the first attacked with cataract.

Of a hundred cases taken in regular succession eighty-eight were double cataracts, and twelve single; but of course many of these latter were of recent formation and the disease will probably follow in the other eye, in most of them. Of the above one hundred and seventeen had undergone the native operation in one eye, but the disease had not been prevented advancing in the other eye, in a single instance.*

I have seen instances where confusion of vision was occasioned to the sound

* The native operation, I have no hesitation in declaring, is most barbarous. In these seventeen cases, fourteen were completely destroyed, and in two of the others vision very imperfect. In their best cases the internal hyaloid membrane is broken down, and absorption of the vitreous humour likewise takes place, and to either or both of these injuries may be attributed the tremulous Iris, so commonly observed, and diminished refractive power, of the vitreous humour, closed pupils, Amaurosis, and general suppurative inflammation of the eye, &c. often follow the native operation; independent of the many cases unfavourable for operation which are couched by them from incorrect diagnosis.

eye, especially, on discovering the blindness of the other eye. Patients may often be observed to put up their hand to the diseased eye, to shut out what little sensibility to light remains, when they wish to notice objects attentively.

Mr. Guthrie states that he has met with several instances of confusion of vision, and in *one* instance the patient wished him to destroy the sight gained by the operation. Dr. Andrew Smith, however, on the other hand, gives *several* cases in illustration of the double vision not existing at all, or being only of very temporary duration. Indeed but very few illustrative cases and facts seem to have been adduced by the *opponents*, whilst the *advocates* are rather replete with them.

In my own experience, I have never seen confused or double vision, excepting on one occasion, and this did not continue, vide case of Kumber Ali Beg.

With reference to the propriety of operating on one eye to anticipate the disease in the other eye, the following cases may be adduced.

Case.—R. Anderson, Esq. æt. 64, resident in India 30 years, became affected with cataract. The disease was complete in the left, incipient in the right. I restored him to sight in the left eye two years ago, after which he became blind in the right, for which he has since undergone the operation.

Case.—W. Burt, æt. 50, thirty years residing in India, in the King of Oude's service, was operated on by Dr. Luxmore some years ago in the right, became shortly blind in the left—I operated on him a short time since, successfully: both these patients see remarkably well with glasses, and are evident gainers, by having at no period been deprived of the blessing of sight.

The following is the result of the twelve cases of single cataract previously alluded to.

Doorjyun Brahmin, æt. 60, blind of the left eye only. The operation of reclination was performed. This patient had no confusion of vision, and saw equally well with this eye as with the other.

Case 2nd.—Taj Khan, æt. 60, cataract of right eye only. This patient on recovering from the operation had no confusion of vision, and saw near objects better than with the other eye.

Case 3d.—Meea Moohummud Ghos, æt. 55, cataract of the left eye only, had no confusion of vision after the operation, and saw near objects better than with the other eye.

Case 4th.—Hussain Shah Syed, æt. 60, cataract of the left eye only. Had no confusion of vision, and saw better than with the other eye.

Case 5th.—Kurrim Ali Khan, æt. 60, cataract of the left eye only. Had no confusion of vision, and sees better with the eye that has undergone the operation than with the other.

Case 6th.—Kumber Ali Beg, cataract of the left eye only. Had double vision for three days, after which it subsided. Vision equally good as with the other.

Case 7th.—Gunga Chumar, æt. 40, soft cataract of the right eye. Prognosis very unfavourable. Three operations were required on this patient, notwithstanding which he sees extremely well and had no confusion of vision. Three others had very fair average vision without confusion, and two were unsuccessful.

In conclusion it appears to me, that as a general rule, the practice of operating is founded on rational principles, without infringing on the aphorism of

"Quantum à rerum terpitudine abas,
Tantum te à verborum libertate sejungas."

in adopting, or recommending the measure.

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36. *Spontaneous Apoplexy of the Globe of the Eye.*—The effusion of blood into the chambers of the eye from mechanical injuries is of sufficiently common occurrence; but its spontaneous occurrence in a person in other respects well, is so rare as to render the following case related in the *Bulletin Général de Thérapeutique*, for 30th April, 1835, worthy of notice.

A woman of 40 years of age was admitted into L'hôpital de la Charité, the anterior chamber of whose left eye was filled with blood; the cornea was convex, and the sclerotica evidently distended, which occasioned violent shooting pain in the organ and the corresponding side of the head. Without being affected with

photophobia, all objects viewed by the left eye appeared to the patient red. This condition had existed nine days, when the patient was admitted into Hospital. An attentive examination of the causes of this accident did not enable the physician to discover any cause for the lesion, unless it were a suppression of the menses.

By bleeding, leeches to the vulva, resolvent cataplams to the eye, the absorption of the blood was effected in two months; and the form of the eye, and the faculty of sight were restored.

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37. *Cod Liver Oil in some opacities of the Cornea.*—M. Carron du Villards, in a paper inserted in the *Bulletin Général de Therapeutique*, (30th Oct. 1835,) lauds the efficacy of the cod-liver oil in opacities of the cornea, whether resulting from slight ulceration or from interlamellar effusion. It is only applicable after inflammation has disappeared. A drop or two of the oil is then to be placed on the cornea with a camel's-hair brush. Sometimes, even the white oil is too stimulating, and it is then necessary to dilute it with sweet-almond oil; in other instances, the white oil is not sufficiently stimulating, and in this case the brown oil is to be used.

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38. *Hemeralopia from Worms in the Intestines.*—A very interesting case of this in a boy, eleven years of age, is recorded by Dr. Alancon, in the *Journal des Connaissances Medico-Chirurgicales*, for Sept. 1835. The boy's health, in all respects, appeared perfectly good, and no apparent cause for the affection could be traced. During the day, he saw as well as usual, but, as evening set in, his vision declined, and at night he became blind. Learning that he had been subject to worms, Dr. A. administered a large dose of oil, which brought away a number of these animals, after which his sight immediately improved, and in ten or twelve days was perfectly restored.

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39. *On Fistula Lachrymalis—new operation for.*—Professor Jacob, of Dublin, has communicated to our Irish cotemporary, (March, 1836,) some interesting observations on the treatment of fistula lachrymalis. "The simple course prescribed by Mr. Ware is probably," he remarks, "after all, the most practicable, and most likely to terminate successfully; if the disease has not occasioned an aperture in the lachrymal sac, or if this aperture be not situated in a right line with the longitudinal direction of the nasal duct, a puncture should be made into the sac at a small distance from the internal juncture of the palpebræ, and nearly in a line drawn horizontally from this juncture toward the nose, with a spear-pointed lancet. The blunt end of a silver probe, of a size rather smaller than the probes that are commonly used by surgeons, should then be introduced through the wound, and gently but steadily be pushed on in the direction of the nasal duct, with a force sufficient to overcome the obstruction in the canal, and until there is reason to believe that it has freely entered the cavity of the nose." "The probe is then to be withdrawn, and a silver style, of a size nearly similar to that of the probe, but rather smaller, about an inch and three-eighths in length, with a flat head like that of a nail, but placed obliquely that it may sit close on the skin, is to be introduced through the duct in place of the probe."

The first direction in the above which calls for observation, is that of pushing the probe gently with a force sufficient to overcome the obstruction. Now the fact is, that the obstruction is often so firm, that it will not yield to a gentle force, and the surgeon must use very considerable pressure to overcome the resistance. I have more than once found it impossible to pass down the blunt probe with all the force I could exercise, probably in consequence of the passage having been completely blocked up by the preceding inflammation. Under such circumstances, I cut away the large part off the handle of a very fine trocar, made for puncturing tumours suspected to be aneurismal, and passed the instrument into the sac, carrying the point downward with a rotatory motion until it reached the nose. I then withdrew the trocar and passed a silver wire in its place, which I retained while I pulled away the canula, leaving the wire behind as a style in the nasal duct. Dr. Lubbock of Norwich, has just described in the Edinburgh Medical and Surgical Journal, a grooved knife for penetrating the obstruction, and affording a means of passing the style. 'The blade is two inches and three quarters long,

including the shoulder, and less than an eighth of an inch broad. In shape it resembles a catlin, and cuts upon both edges for the extent of half an inch from its point, where the knife is thin; but as the thickness of the instrument increases towards the handle, the edges become too thick to cut easily. The groove extends exactly along the centre of the anterior surface; the posterior surface is slightly convex, in order that the groove may be made as deep as possible.' I have no doubt that this contrivance is well calculated to effect its object.

"Having sometimes experienced considerable difficulty in introducing the common nail-headed style after the probe with which the passage had been forced was withdrawn; and also, having seen several cases in which the common style had slipped down into the duct, and its head became concealed in the sac, I adopted the following plan, and found it in several cases safe and convenient.

"Having made the opening into the sac, I pass a common surgeon's probe into the duct, and force it firmly and steadily through the obstruction, till the point rests on the floor of the nostril. I then bend the probe down on the cheek, over the point of my finger, which I press against it where it protrudes from the external opening, and then cut it off with a bone forceps to the proper length; thus leaving a style the exact length of the passage, which cannot become concealed by its head slipping into the sac. As the tumefaction subsides, the protruding part of the style is shortened with the cutting plyers, until it is on a level with the orifice in the skin, when it may be taken out and blackened with sealing-wax as the head of the common style is, and again replaced; which at this stage is attended with no difficulty.

"It appears surprising to me that surgeons have never recollected that an opening might be made into the lachrymal sac without cutting through the skin of the face, and thus producing a cicatrix in a situation where it should be avoided. Surely the sac is as accessible, if not more so, within the eyelid as without. Externally it is covered by the skin and the fibres of the orbicularis palpebrarum, the tendon of which muscle running across the sac to its insertion, leaves a very small space for an opening between it and the ridge of bone belonging to the nasal process of the superior maxillary bone, which constitutes here the prominent margin of the orbit, and by its elevation renders the free access to the lower part of the sac somewhat difficult from without. Internally the sac is covered by the conjunctiva, some adipose cellular membrane, and Horner's muscle; and the caruncula lachrymalis, lying over the termination of the lachrymal canals at the upper part, leaves at least a quarter of an inch accessible to the point of the bistoury below. The lower lid being depressed, the point of the instrument should be introduced into the sac just beneath the caruncula lachrymalis, and pushed directly downwards, inclining the edge of the blade a little inward; when withdrawn, the finger depressing the lid should not be removed, unless a canula, or Mr. Lobbock's bistoury be used, as the opening in the conjunctiva may then cease to correspond with that in the sac, and the introduction of the style be impeded. Since this mode of operating occurred to me, only one case offered in which it could be fairly tested. It was one of those enlarged sacs, distended with tears and mucus without inflammatory action. I compressed the tumour with my finger, at the same time pulling down the lower lid, thus rendering it prominent beneath the conjunctiva, where I opened it freely, introducing the bistoury just below the caruncula lachrymalis. I then passed the probe through the obstruction in the nasal duct in the usual way, bent it over the cheek as I have described, and cut it to a convenient length, allowing the projecting portion to fall in behind the lower lid, where it lay quietly for three weeks without producing irritation or inflammation requiring its removal.

"I ventured to suggest this mode of operating without having yet submitted it to a fair trial myself, with the hope that some surgeon, having extensive opportunities of ascertaining its value, may be induced to submit it to experiment, at the same time that I propose to do so myself. Many cases may occur where the plan cannot be adopted, as where there is abscess, with much external tumefaction of the lids; but even in such case, it may be a question whether an opening might not be made from the conjunctiva after the swelling has subsided. If a fistulous opening should remain, might it not be less annoying and less noticed inside the lid than externally? In considering this, or any other operation for the restoration of the passage from the lachrymal sac to the nose, the propriety of

resorting to such a measure in all cases may fairly be questioned. Simple obstructions, with more or less of *epiphora*, or watering of the eye, are sometimes attended with little inconvenience, and often the obstruction is only temporary, arising from tumefaction of the mucous membrane from inflammatory action. In case of abscess of the sac, the most prudent course may be to open it, and secure a free outlet for the matter for some days, after which the opening may be allowed to heal up, if so inclined; and if it should become fistulous, the operation may be resorted to under much more favourable circumstances than while the parts are in a state of inflammation. Many patients prefer the inconvenience of the epiphora to that from the use of the style when the matter is fairly explained to them. I have not alluded to the ancient plan of introducing a tube into the passage, so extensively practised by Dupuytren according to the reporter of his lectures, because I think the extensive practice of any operation is not conclusive evidence of its superiority. A fair question to put with reference to the gasconade, that three thousand tubes had been introduced into the lachrymal passages by that gentleman, would be to inquire what became of those tubes, and how the cases terminated. The opinion of Mr. Ware, formed on a calm comparison of the plan with that of the common style, appears to justify the preference given to the latter by English surgeons."—*Dublin Journ. of Med. Science, March*, 1836.

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## SURGERY.

40. *Case of Partial Amputation of the Foot.—Secondary Hæmorrhage.—Recovery.*—The following interesting case of partial amputation of the foot, is recorded by James Syme, Esq., in our *Edinburgh* cotemporary for January last.

"A——— P———, aged 12, applied at Minto House in the beginning of May, on account of a carious affection of the foot, which had existed for more than two years, and latterly reduced her general health to a very great degree. Her friends were willing that the foot should be amputated; and it seemed at first that nothing less severe would be sufficient for her relief, the whole of the tarsus being apparently implicated in the disease. By carefully examining the different sinuses, however, I ascertained that the joints between the *tibia* and *astragalus*, and *astragalus* and *os calcis* were sound; and, therefore, saw no objection to Chopart's operation, since, if any part of the disease were left by it, there would be plenty of room for its removal.

"This proposal was carried into execution on the 20th of May. The articulating surface of the *os cuboides* was divested of cartilage and apparently dead, and the corresponding surface of the *os calcis* was discoloured. I thought it right to remove this portion, and easily did so with a strong knife. There was then nothing left in the stump at all suspicious.

"Every thing went on well for a few days after the operation, but the wound bled occasionally during the following week. One of my pupils, who had charge of the patient, was repeatedly sent for on account of hæmorrhage, which on his arrival he either found had ceased, or readily arrested by the application of cold. Thinking it necessary to interfere more effectually, as she had become extremely weak, and quite exsanguine in appearance, I separated the flap, and perceived arterial blood issuing from a point, which proved to be a crevice in a small tough white bag about the size of a large pea. Regarding this as a recent fibrinous formation, I tore it away with forceps until nothing was left beyond the mouth of the vessel to which it adhered, viz. the external plantar. Graduated compresses and a bandage were then applied. The cure met with no farther interruption; and the patient soon regained her strength.

"It used to be alleged in objection to this operation, that the extensors of the heel being left attached, while the tendons of the flexors of the ankle were cut across, the stump would be pointed downwards, and rendered useless to the patient. Happening about twelve years ago to see a case at Göttingen, in which Langenbeck had recently operated, and understanding that he had done so previously on several occasions, I particularly inquired whether this inconvenience was experienced. Having been assured that it had not, I concluded that the objection was theoretical, and not founded on experience, and resolved that it should not deter me from

performing the operation in any case that might require it. I have accordingly operated six times with perfect success. In relating several of these cases in the foregoing reports, I took occasion to notice the objection which seemed to have prejudiced the profession against the operation, and endeavoured to remove it, as well by explaining, that the tendons when divided acquired new attachments to the neighbouring parts, as by stating the facts, that the stump was not rigidly extended, but remained completely flexible under the patient's control; and that, so far from being useless, it allowed walking and other kinds of progressive motion to be accomplished without deformity or lameness. At the meeting of the Association for the Promotion of Science in Edinburgh, in September, 1834; I showed that a patient, who had suffered partial amputation of the foot, four years before, could walk without perceptible defect, and move the stump at will."

The operation of Mr. WHATTON, noticed in our last number, (p. 524,) and which was received on its annunciation to the Medical section of the Dublin meeting, with high encomiums, Mr. Syme says cannot be regarded as a substitute for that of Chopart, since in the cases that require the latter to be performed, the foot is diseased from one side to the other. "The principle of removing part of the tarsus along with the diseased metatarsal bones," Mr. S. adds, "has been so long established, that it would be difficult to discover who had the merit of originating it. But the particular operation which Mr. Whatton relates, has been so fully described and illustrated by Mr. Aston Key,* (Pl. II. figs. 1, 2,) that I am at a loss to understand how any claim to the merit of originality on account of it should at this time have been either advanced or conceded."

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41. *Dislocation of the Thigh Bone into the Ischiatic Notch—Reduction on the thirteenth day after the accident.*—By JAMES SYME, Esq. Lawrence Smith, aged 18, was admitted on the 10th of July, soon after having fallen from the roof of a house, four stories high, where he had been painting a window.

He lighted on the pavement, and appeared to have struck the small of his back, where a slight discoloration was next day perceptible. At the time of admission, he had not the command of his inferior extremities, and could not evacuate either the bladder or rectum. He was bled, and next day cupped on the loins, which were afterwards fomented. Under this treatment, he soon regained the power of performing his evacuations, and moving his limbs, but still complained of great pain in the back, and could not alter his position in bed without much difficulty. Thinking that his complaints depended on concussion of the spine, I abstained from farther interference, in expectation that the remaining part of his recovery would be completed by the resources of the system.

On the thirteenth day after the accident, wishing to ascertain what progress he had made, I desired him to try to get out of bed. He did so, and then presented an appearance of the right hip, that immediately suggested the suspicion of dislocation, which was confirmed by a careful examination of the joint. The limb when left to itself was slightly shortened and inverted, the hip and knee-joints were both a little bent, the hip appeared rounder than natural, and the head of the bone could be felt at the margin of the sciatic notch. By gentle extension the foot could be drawn nearly, if not quite to the same length as the other, and the toes could be turned outwards until their direction was straight, but not any farther than this. When freed from restraint, the limb immediately resumed its former position. The thigh bone could not be brought into the same line with the trunk, and when this was attempted by pressing it down upon the bed, the patient arched his back, which in its turn could not be depressed until the thigh was allowed to rise.

The patient was carried into the operating room, and laid upon a mattrass on his sound side. A folded sheet was drawn under the injured thigh, with a small hair-cushion interposed between it and the perineum and fastened to the wall. Pulleys were attached by means of a skein of worsted to the middle of the thigh, so as to act in the direction which it assumed from the dislocation. I then placed a towel under the thigh, to elevate the head of the bone at the proper time, and held the ankle in my hand to effect the necessary degree of rotation. Extension had not been made for more than a minute, when the bone returned into its place.

* Averill's Surgery, 2nd edit. 1825, p. 184.

All the symptoms of the injury immediately disappeared, and the patient was soon dismissed quite well. A useful lesson may be drawn from this case as to the danger of overlooking dislocations in circumstances not particularly directing attention to their existence, and more especially when we can account satisfactorily otherwise for their symptoms. On this account, and also because, as Sir A. Cooper has remarked, "this dislocation is the most difficult both to detect and to reduce," I have related it fully.—*Ibid.*

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42. *Aneurism of the right Subclavian Artery.*—A case of this, successfully cured by operation, is recorded by Dr. HOBART, of Cork, in the *Edinburgh Medical and Surgical Journal*, for January last. The subject of this case, was a man 38 years of age, and of good bodily health. The tumour appeared suddenly without any ascertainable cause; and when the operation was performed, was the size of a large duck-egg. The operation was performed as follows:—The patient was placed on his back on a table, with the shoulders a little raised, the head and neck inclined to the left side, and the right shoulder and arm drawn downwards: the integuments were carefully drawn down over the clavicle by an assistant, and Dr. H. divided them on the bone, by an incision about two inches in length, commenced at the outer edge of the sterno-cleido mastoid muscle, and extending towards the acromion. The integuments were then allowed to retract, and Dr. H. next cut through the *platysma myoides* and cervical *fascia*, completing their division on a director. The external jugular vein was drawn to the outer extremity of the wound, and retained there by means of a blunt hook. The cellular membrane and adipose substance, which were considerable, Dr. H. carefully detached with his fingers and the handle of a scalpel, until he arrived at the artery, where it emerges from the anterior *scalenus* muscle. He then carefully made an opening into its sheath, barely sufficient to allow the introduction of an ordinary probe, and avoiding all other disturbance of its contiguous connexions, cautiously passed a common aneurismal needle armed with a single silk ligature round the vessel, and tied it. The tumour now became somewhat flattened, all pulsation stopped, and the radial artery ceased to beat. The lips of the wound were then brought together, and kept in apposition by means of a single suture and adhesive straps. The limb was enveloped in a flannel bandage, and the patient was put to bed. The progress of the operation was not retarded by a single accident, and the demeanour of the patient throughout was most satisfactory, having borne it with the greatest calmness, and never uttered a moan.

Nothing unusual occurred during the progress of the case, and in less than a month the patient was able to leave his house. He subsequently was able to return to his business. All the movements of the limb are performed without the slightest inconvenience. The tumour gradually declined, and at the date of the report, less than three months after the operation, scarcely a trace of it was remaining.

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43. *Fracture of the Lower Jaw at the Symphysis.*—An example of this accident, which Boyer asserts never to happen, is recorded by Mr. Syme in the *Edinburgh Medical and Surgical Journal* for January last. It occurred in a man 28 years of age, and was produced by a blow with a fist. The fracture was seated exactly at the symphysis, and extended perpendicularly downwards between the two front incisor teeth. There was hardly any tendency to displacement, and the treatment was consequently very simple.

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44. *Amputation at the Hip Joint.*—This operation was performed not long since at l'hôpital St. Louis, by M. GERDY. The subject of the operation was a woman 42 years of age, affected with an enormous cancerous tumour, situated at the fore and upper part of the left thigh. This tumour was moveable, and the surgeon hoped to be able to extirpate it; but a considerable hæmorrhage at the commencement of the operation required the femoral artery to be tied, and the patient being supposed to be too weak to bear the loss of blood, which would follow the removal of the tumour, it was decided to amputate the limb at the hip joint. The wound was not united by the first intention: on the ninth day tetanic symptoms appeared, and the patient died. On examination, cancerous tumours were found on the surface of the pleura, and in different parts of the lungs. The only case of amputation at

the hip joint, which has been successful in France, is said to be that performed by Delpech in 1823; and in this case, union of the wound, by the first intention, was effected. That the attainment of this object in M. Gerdy's case would probably have not prevented the fatal termination, may be admitted; but it is certain, that the establishment of such an immense suppurating surface, as that produced in the operation he performed, was calculated to exhaust the patient, who we are told was too weak to bear any considerable loss of blood, and lessen the chance of recovery.—*Bulletin Gén. de Thérap. 30th May*, 1835.

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45. *Ligature of the Posterior Iliac.*—Professor Baroni, of Bologna, has successfully performed this operation on a farmer 22 years of age, who in falling from a tree, was wounded by his sickle entering deeply into his right buttock.—*Lancette Française, 7th Nov.* 1835.

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46. *Chloride of Lime in Wounds attended with great pain.*—The *Gazette Médicale de Paris* for 31st October, 1835, contains an interesting memoir by Dr. Chopin on this subject. In six cases in which he has tried the application, and the details of which are given, it acted promptly in calming the most violent pains in wounds, produced by different causes. One of these cases we will give a brief summary of. It was that of a young man, 18 years of age, whose hand was terribly shattered by the discharge of a pistol, whilst he was loading it. When seen by Dr. C. the wound had become extremely painful, the pain extending to the axilla. The hand was placed in a vessel of tepid water, to which one spoonful of a saturated solution of chloride of lime was added, and in less than a minute the pain began to subside, and in five minutes it had so much lessened, that Dr. C. could turn the limb in all directions and dress it without causing pain. The dressings were kept constantly wet with the solution, and the cure was effected without any untoward symptoms.

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47. *Chloride of Soda for Sore Nipples.*—Dr. Chopin in the Memoir just noticed, says, that of all the means recommended for the cure of sore nipples, nothing has so well succeeded in his hands, as frequently repeated lotions with chloride of soda. In one or two days, he says, it will often effect a cure.

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48. *Aneurism by Anastomosis.* A paper on this subject was presented to the Medical Section of the British association by Mr. Adams. The author commenced by stating, that it was Mr. J. Bell who had the merit of first directing the attention of the profession to this disease. Many were acquainted with it before his work appeared; the true arterial form of it, however, was generally confounded with true aneurism, and the operations, which were performed in ignorance of its nature, were imperfect and unsuccessful. It was pleasing to reflect on the good which Mr. Bell had effected; but still it must be confessed that our knowledge of the nature, form, and anatomical characters of this affection were limited, and he did not think he was occupying the time of the section unnecessarily in attempting to throw additional light on the subject.

Much variety prevailed in the external characters and appearances of this disease. It sometimes occurs in the form of stains or nævi on different parts of the body of a Modena blue colour; in other places it assumes a vermilion tint. Here the disease is confined chiefly to the capillary vessels; in the former case to the arteries, in the latter to the veins. In others of these nævi a pulsation is found to exist; here the aneurismal condition is not limited to the capillaries, and extends to the neighbouring arteries. These grow very rapidly, bleed frequently, and often require an operation to save the patient's life. This operation, however, was not always successful. The surgeon is called on to operate at great risk, and it has not unfrequently happened, that in cases of the disease in children, death has occurred *in ipso opere*. Where these aneurisms are confined to the capillary vessels, the disease is generally mild; when they extend to the larger arteries and veins the consequences are more dangerous.

The first or simple form of the disease commences like a stain in the skin, of a claret or rose colour. Sometimes they are very small, sometimes they extend nearly over the whole body; the condition of the skin is altered, but there is no tumefaction. They occasionally remain quiet for years, but sometimes, parti-

cularly about the period of puberty, suddenly increase in size. Occasionally this state of the vessels is not limited to the skin, but also extends to the muscles, and even exercises inconvenient pressure on bones. One of the most remarkable forms of the last mentioned affection is that which sometimes attacks the tongue. It is seated in the veins, grows slowly, and has no pulsation. At other times it assumes a sudden increase of size, particularly in females during the menstrual period. [Mr. Adams here exhibited a drawing of this disease, as it appears in the tongue of a female. The tongue is much enlarged, and protrudes from the mouth. This, however, does not interfere with the patient's singing, or the pronunciation of the lingual consonants.]

The next case which he had to lay before the section, was one which had been operated on some years back at Mercer's Hospital, by Mr. Reid of this city. The disease had followed an injury of the lip, received at Trafalgar, and like the former was confined to the veins. Pressure had been tried in this case without effect; the tongue increased in size, and being frequently wounded by the sharp points of the teeth, vast quantities of blood were lost. It was to arrest one of these hæmorrhages, that the common carotid artery was tied. It had the effect of producing a temporary shrinking in the tumour, but the disease remained unchecked, and the patient died some time afterwards from hæmorrhage, produced by sloughing of the carotid at the situation of the ligature.

The next class of nævi were those connected with the arterial system. Mr. Adams here exhibited several beautiful drawings, by Mr. Conolly, to illustrate this form of aneurism by anastomosis. He detailed the particulars of a case, which had been operated on successfully by Mr. Carmichael. The operation consisted in passing a number of threads (twelve or fourteen) through the tumour; this was followed by suppuration of the parts and withering of the aneurismal vessels. The only thing further he had to observe, with respect to this form, was that in females it sometimes became the seat of vicarious menstruation.

The second part of the paper was occupied in considering the subject of aneurism by anastomosis. This disease was also first described by Mr. Bell, and is much adverted to by the French. In this disease the arteries are not only dilated, but also coiled up and extremely tortuous, presenting at various parts of their course nodosities, somewhat resembling the bulb of a thermometer. M. Breschet who has paid a great deal of attention to this disease, expresses in one of his publications, the regret he felt at not having had an opportunity of studying the disease in the living. Mr. Adams had a regret of an opposite description, he had not been able to examine it in the dead.—It was pleasant, however, to reflect, that the facts recorded by each would match the other, and tend to give a correct general view of the disease. [Mr. Adams here exhibited drawings illustrative of the form of aneurism under consideration.]

Aneurism by anastomosis is a disease in which the patient may live for years. The woman to whose case he had just referred, died not of aneurism but of consumption, and he had known patients to live with it for twelve, fourteen, and even seventeen years.

The last case to which he would allude was that of a woman whom he had recently visited, and whom he would be happy to shew to any gentleman wishing to examine the disease. In this case the disease had commenced about fourteen years since, on the left side of the neck, in the vicinty of the ear, and was attributed to a blow. It extended gradually downwards, and at present occupies the whole of the supra-clavicular fossa. The *fremissement* is not only distinct in the tumour, but can also be felt and heard over the mastoid bone on the opposite side of the neck. Its diagnosis is established by the history of the case, its duration, the appearance of the veins on the surface, and the remarkably distinct purring thrill.

With regard to the structures of these aneurismal conditions much obscurity still exists. Mr. Bell says, that it consists in a tortuous condition of the arteries. He states that there are three peculiarities to be observed in all such tumours; first, a congeries of small arteries; next, a congeries of absorbing veins; and lastly, of intervening cells.

Mr. Adams here took an elaborate review of the different accounts given of aneurisms by anastomosis, and stated that the structure of these tumours seems to be analogous to the erectile tissues. One of the best modes of ascertaining their

structure had been adopted by the late Mr. Shekleton; this gentleman having injected the part through one of the largest vessels, and then by placing it in an acid solution, corroded its animal parts, leaving the vessels entire. A magnified drawing of this preparation was exhibited to the meeting, shewing the retiform arrangement of the vessels, their tortuosity, and their abrupt enlargements at certain spots, and contractions at others. Mr. Adams concluded his elaborate paper by some interesting observations on the tortuosity of arteries.—*Dublin Journal Sep.* 1835.

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49. *Bony union of fracture of neck of Femur.*—Mr. Snow Harris communicated to the Medical Section of the British Association an example of this. The subject of the case was a gentleman who had received an injury by being thrown from his gig several years before. He had got up and walked immediately after the fall, but continued lame from that period to the time of his death. He had been attended by some of the most celebrated surgeons in London; but they had not been able to determine whether there was fracture of the bone or not, but kept him lying on a sofa for nearly twelve months. The injured limb was shortened, the foot everted, the thigh wasted, and, owing to the constant inclination of the body forwards on one side, curvature of the spine took place. Some time ago the gentleman died, and Mr. Harris, being anxious to examine the parts, removed the acetabulum and a portion of the thigh bone, which he should feel much gratification in exhibiting to the meeting. He had found the trochanter higher up than natural, and the neck of the bone shortened. Lymph was thrown out on the head of the bone and about the ligaments of the joint. Mr. Harris here exhibited the bone. He said that a section of it showed plainly the line of osseous union all throughout.—*Ibid.*

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50. *Nitrate of Silver for the cure of Chilblains.*—Dr. Gamberini recommends the following remedy to prevent the ulceration, and even to disperse chilblains; they should be moistened with a piece of linen slightly soaked in water, so as to keep the skin soft and moist, without being exactly wetted; and when thus prepared, a piece of nitrate of silver is to be rubbed on the chilblain; moderate pressure should be used, and it should be slowly passed several times over the part. In a few minutes the epidermis becomes very slightly whitened; at the end of some hours, and generally when the part is exposed to the light, as in the chilblains of the hands, the epidermis becomes brownish, and presents a greater consistence to the touch. The effect is just the same as that produced on the fingers when a piece of this caustic is handled without precaution. A strong pressure, or more prolonged application of the remedy will denude the part; the same thing will happen if the surface be too much wetted before cauterization. But, in general, we may say that when the cauterization is maintained within proper limits, it causes no pain, and rarely a slight pricking.

This simple treatment relieves the patient from all inconvenience in the course of a few days. It may, however, become necessary to re-apply it once or twice. —*Lond. Med. & Surg. Journal, Feb.* 20, 1836.

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51. *Ununited Fractures successfully treated by means of a Seton.*—Two cases of this have been recorded in *Il Filiatre Sebezio,* (May, 1835,) by Dr. Portal. The subject of the first case is a stout peasant, who was admitted into the hospital at Palermo, in September, 1834. In July preceding he had received a gunshot wound in his left arm, which caused a comminuted fracture of the humerus at its middle third; a few splinters had been extracted by a surgeon on the instant. It was two months from the occurrence of the accident that he presented himself at the hospital with the ununited fracture, which was the seat of very sharp pains on the least motion. Matters being in this state, Dr. Portal, previous to amputation, wished to try the effect of a seton introduced between the two ends of the fractured bone. During the first three days the seton caused pain and inflammation, which were treated topically by emollients, and internally by the potus tartari. On drawing the seton on the fourth day a great quantity of pus escaped from the wound, but its issue diminished gradually: the rubbing caused by the seton between the two fragments gave issue to a splinter of bone. From this moment the pains diminished greatly: the seton was allowed to remain in for

twenty-four days, during which time the pus became improved both in quantity and quality. The seton was then withdrawn, and the wound dressed with styrax ointment; a circular bandage and graduated compress was the means of keeping up a light pressure during the month of October and part of November, after which the patient left the hospital perfectly cured.

In another case, that of a child aged two years, who had fractured the right thigh in its upper third, after every other means had failed of causing union of the fracture, the seton was introduced, and several fragments of bone came away that had remained for three months. There was some shortening of the limb, but the thigh acquired such solidity that the patient left the hospital, perfectly cured, in the following February.—*Archives Générales*, July, 1835.

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52. *Case of Artificial Anus, produced by a Lance Wound, cured by a new method.* By Prof. Dieffenbach.—A Polish officer received, in combat, a thrust of a lance in the abdomen: the blade penetrated up to the shaft. The result was a wound about an inch broad and two inches from the umbilicus, from which blood and excrementitious matter were simultaneously discharged. The patient's life was saved by an antiphlogistic treatment, but an artificial anus remained, which resisted the means used by several surgeons to close it. The whole circumference of the opening was surrounded with a hard cicatrized mass, whose long diameter was five inches, and its breadth two inches. The middle of this mass was occupied by a round hole, which easily received the tip of the middle finger: its inner edge was lined with the mucous membrane of the intestinal canal; probably the transverse colon. An examination of the cavity of the intestine showed not only that it was united to the abdominal parietes, but that its calibre was considerably diminished. As soon as the opening was uncovered the contents of the intestinal canal issued forth; while it was compressed with a pelotte and bandage they were retained. However, when the patient went to stool, it was impossible to prevent a discharge of fecal matter through the artificial anus. After various unsuccessful attempts, the patient had recourse to a celebrated physician at Berlin, who thought he could close the opening by a *milk diet*, restricting the use of all solid food. The treatment had no other effect than that of rendering the patient exceedingly thin. He now placed himself under the care of M. Casper and the author. The first care of the latter surgeon was to restore the patient's strength by proper diet, &c. They then attempted to destroy the hard edges of the orifice with the actual cautery, but this means was also unavailing: an ill-looking, pale, granular mass constantly shot up, which they could not get rid of. M. Dieffenbach now determined on endeavouring to close the artificial anus with a portion of integument taken from the sound parts; for this purpose, he commenced by cutting away the hardened edge of the orifice, and then made a transverse incision of the skin, three inches long, above the wound, which this had left: a flap of skin, two inches broad, was dissected off, and this formed a kind of bridge that was connected by its two extremities only with the integuments of the abdomen. After having arrested the hæmorrhage, M. Dieffenbach turned this flap downwards over the artificial opening, and united its edge with the lower edge of the circumference of the round cavity: here the two edges were united by a great number of small needles and sutures. The large wound thus produced was filled with charpie, to diminish the dragging and extension of the stitches. However, this experiment failed, the flap of skin died, and the granulations which sprung up were not sufficient to close the opening: the latter remained, although somewhat diminished. The author now proposed a method of treatment quite different; this consisted in destroying, with the actual cautery, the edge of the bowel united to the orifice of the wound, and also, at the same time, a considerable portion of the intestine within the orifice, sparing, however, at each cauterization, the external integument. The edge of the intestine was touched with the actual cautery the first day; a few days later he introduced a hot iron, crotchet-shaped, and as thick as a pen, into the intestinal cavity, and touched its parietes all round. This gave little or no pain, and was followed with a happy result. The opening was immediately reduced by the rapid growth of granulations; and finally, after a treatment of nine months, the fistula was completely closed.—*Lancet*, Jan. 9, 1836, from *Kleinert's Repertorium*, Nov. 6, 1835.

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53. *Plan of tying the Internal Mammary Artery.* By M. Bonnafont, Demon-

strator of Anatomy at the Hospital of Instruction of Alger. (*From the French Lancet*, August, 1834.)—The internal mammary artery is far from being beyond the action of external bodies. Placed at first behind the superior third of the posterior surface of the sternum, it diverges by degrees from it to run between the fibro-cartilages of this bone and the interval corresponding to the fifth, sixth, seventh, and eighth ribs, where it is distant almost an inch from the external border of the sternum. Placed immediately on the pleura, covered by the intercostal muscles and the integuments, it may be easily wounded. The calibre of this artery being sufficiently great to produce mortal hæmorrhage, if wounded, it is of consequence to know how to stop this fatal bleeding by placing a ligature on the artery. The following is the operation recommended.

1st, Cut the integuments down to the external intercostal muscles, to the extent of two inches in lean, and two and a half in fat subjects, beginning at the external border of the sternum, encroaching a little on its external surface, and stretching to the middle of the corresponding intercostal space, following a line parallel to the axis of the ribs.

2nd, Tie carefully the small arterial branches, which might embarrass the operator by the blood which they furnish.

3d, Cut, by means of a director and straight-bladed bistoury, layer by layer, the external and internal intercostal muscles, taking care, in cutting the latter, to place the director in a sufficiently oblique direction, to avoid wounding the pleura. That being done, the internal mammary artery will be distinctly observed placed between the nerve, which is situated externally, and the vein, which is placed internally, and above the pleura, to which it nowhere adheres. Nothing is then easier than to place, by means of a crooked needle, or a director a little bent, a ligature on the artery. The wounding of the pleura may be avoided by taking the precaution mentioned above.

As the inferior portion may furnish blood from its anastomosing with the epigastric artery, it may be tied by the same operation in the intercostal space below. —*Edinburgh Med. and Surg. Journ.* January, 1835, from *Lancet Française*, Aug. 1834.

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## MIDWIFERY.

54. *Acute pain in the Vagina after delivery.*—Dr. Chopin, in an article in the *Gazette Méd. de Paris*, (31st Oct. 1835,) states, that shortly after delivery, and, especially of first children, he has discovered on the posterior surface of the vagina of the mother, small excrescences of the size of a grain of wheat, rarely of the size of a small pea, and of a deep red colour. They are easily recognised by their saliency, their exquisite sensibility, and their deeper colour than that of the vagina. The pain attending them, he describes as more insupportable than that of labour. His patients describe it as that of a hot iron in the vagina. He says that the pain is relieved by the application of lint, dipped in chloride of lime, to the tumours.

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55. *Cæsariam operation.*—Among the interesting cases laid before the Medical Section of the British association at the meeting in Dublin, was one in which the cæsarian operation was successfully performed, communicated by G. B. Knowles, Esq., of Manchester; the patient after being delivered of her fourth child, received an injury, which was followed by pain of the hip joint, and loss of power in the lower extremities. Since the commencement of this disease she had several miscarriages. In November last she was again seized with labour pains, and on examination, it was found that the sacrum projected in such a manner as to feel like the head of the child, narrowing the lower outlet of the pelvis to two inches by one. The operation was performed thirty hours after the commencement of labour, and six after the rupture of the membranes. Though the incision was made over the placenta, very little blood was lost, and the patient bore the operation extremely well. With the exception of tympanitis, she had no bad symptom for the first two days; on the third she had vomiting and hiccup, which yielded to treatment, and the tympanitis was removed by the use of turpentine. Owing

to the distension of the belly, the lips of the wound could not be brought into apposition until the fifth day; in the interval a limpid fluid was discharged from the opening. The patient recovered in about a month.—*Dublin Journ. Sept.* 1835.

56. *Recovery from Asphyxia in a new born infant.*—The following case, very remarkable and interesting from the length of time animation was suspended, has been communicated to the Edinburgh Medico-Chirurgical Society, by Dr. MACWHIRTER; and is contained in our esteemed *Edinburgh* contemporary for January, 1835.

"I was called, at about half past 11, P. M., to a lady who had been several hours in labour. I found the *os tincæ* expanded to the extent of a crown piece; the membranes pressed forward by every pain, and the presentation '*breech*,' pain recurring regularly and forcibly every four minutes. About a quarter before one, the membranes gave way, the *liquor amnii* was discharged, and the labour, which was a first one, advanced slowly, until half past one, when the breech was born. Suspecting that resuscitation would be necessary, I desired the nurse to have warm water at hand. The body and head were long *in transitu;* the funis was round the neck twice; I disengaged it, but could feel no pulsation. I got my fingers into the mouth of the fœtus, and succeeded in bringing it beyond the verge of the perineum, but it did not breathe. In about ten minutes, by management and the uterine action, the head was delivered, and along with it the placenta.

"The infant appeared *dead;* indeed, it was thrice felt convulsed *in transitu.* The face was as white as paper, but there was some colour in the lips; still no pulsation of the heart could be felt.

"I placed the child, with the placenta attached, in a warm bath; gently inflated its lungs with my own breath, in the usual way; rubbed brandy on the chest, abdomen, and head, spine, extremities, &c. As the funis when cut did not bleed, I therefore tied it. After immersion for about half an hour, I took it out of the bath; dried, and wrapped it in warm flannel, and made the nurse carry it near the fire. I then continued the gentle inflation from time to time, and the spirituous friction, to the extent of nearly two bottles of brandy and whiskey, occasionally slapping the bottom, when at length, about forty or fifty minutes after birth, it gave a sob. This was indicative of existing life, and encouraged me to persevere. It continued to sob or gasp at intervals of a minute or two, and I now found that I could feel the heart beat.

"The above means were most perseveringly continued, until the circulation and breathing very gradually increased. At the end of an hour and a half, the child gave a whimper; the eyes opened; the lips became red; it breathed regularly; cried lustily. It lived, and continues to live."

57. *Case of Cæsarian Section successfully performed.*—By Dr. WITTEKOP, army surgeon at Geldern. A strong healthy peasant, who had been delivered by perforation of the child's head three years before, demanded on this occasion that the cæsarean operation should be performed. The conjugate diameter of the pelvis was less than two inches. She felt distinctly the movements of the child; the labour-pains were very frequent and severe; the liquor amnii discharged; the os uteri moderately dilated. The head was the part which presented. The author, having bled the woman, and emptied the bladder with a catheter, made his incision along the linea alba. The loss of blood was moderate, and the infant, with the placenta, easily extracted: the intestines did not protrude through the wound. After the operation the patient seemed well enough; but as the bowels were constipated, an emuls. c. sal. glaub. et nitr. was given. She was also ordered a draught of the carbonate of soda, with some laurel water and syrup of ipecacuanha. Finally, a lavement was thrown up. The bowels, however, remained obstinately costive. The patient vomited frequently, and was seized with constant hiccup and great anxiety and agitation. The abdomen appeared much developed between the umbilicus and false ribs; almost tympanitic; however, there were no absolute inflammatory symptoms. The patient was now ordered an inf. fol. sennæ compos., to be followed by an enema of glauber salts with hyosciamus. This produced at first several feculent stools, and a discharge of flatus issued, succeeded by acute pain in the pelvis; at the same time the discharge of bloody serum from the inferior angle of the wound, left open on purpose, was much diminish-

ed. In order to prevent the passage of the secretion from the wound into the abdominal cavity, the woman was now placed on her abdomen, and a clyster of starch, with opium, was administered at once. The purging and painful sensations soon diminished, and the discharge from the wound took place with its former abundance. Cicatrization now rapidly advanced, the patient taking bark, columba root, and wine, and on the eleventh day after the operation the patient was able to leave her bed. The secretion of milk was small, and the infant was nourished artificially; however, it thrived well.—*Kleinert's Repertorium.*

58. *Case of Cæsarean Section successfully performed.*—By Dr. Von der Fuhr, of Dülken. The subject of this case was a female, 36 years of age. Labour had commenced twelve hours before the operation. This woman had already borne four children without any particular difficulty; but after her last delivery she commenced experiencing pains in the limbs, and especially in the region of the pelvis; these gradually increased to such a degree, that she was at last unable to move or walk. On examining the pelvis, it was found that the ossa pubis had inclined inwards towards each other in such a manner, that the arch of the pubis was completely gone, and the two bones formed an acute angle at the symphysis. The promontory could be easily reached with the finger; the antero-posterior diameter was two inches and a quarter; the transverse diameter was very small, and especially the oblique one. The whole inlet of the pelvis was considerably narrowed. Under these circumstances the author considered the only hope for mother and child lay in performing the cæsarean operation. This was accordingly done in the usual manner, and a healthy child extracted. After the operation the patient seemed more lively than could have been expected, but in a few days unfavourable symptoms set in, viz., frequent vomiting and costiveness. Some calomel with an occasional enema, was administered; this brought away a quantity of feces and wind, and the patient felt much improved. The amelioration continued for the following days: the lochia now set in, and milk was secreted from the mammæ; however, the wound did not present an appearance of speedy union; it was half open, and at the second dressing its edges were completely separated. The author, therefore, thought it best to heal by the second intention; the wound soon began to suppurate; every thing went on well, and it was healed in less than seven weeks. During this period the woman did not suffer from any of her former pains, and was carefully restored. The child died on the fifth week.—*Ibid.*

## CHEMISTRY.

59. *Analysis of the Brain.*—According to M. Couerbe, the brain, when examined with a powerful microscope, appears to be composed of globules which are slightly elliptical, and are larger in the gray substance than in the white. These globules are coagulable by acids, like those of milk and the blood, and by a great number of other substances.

M. Couerbe finds in the brain:—1st. A pulverulent yellow fat, *stéarconote.* 2nd. An elastic yellow fat, *cérancéphalote.* 3d. A reddish yellow oil, *éléancephol.* 4th. A white fatty matter, *cérebrote.* 5th. Cholesterine, *cholestérote.* Added to these are the salts found by Vauquelin, lactic acid, sulphur, and phosphorus, which form a part of the fats above named.

Before the brain was submitted to various kinds of treatment, it was deprived of its membranous covering and washed with cold water, in order to separate, as nearly as possible, all the blood with which it is always impregnated; it was then macerated and digested in cold æther, and all that was soluble in this fluid was dissolved by maceration in repeated portions of it. The first contained but little of the fatty matter in solution; the æther appeared merely to expel the moisture of the brain, and they were separated together by decantation. The second portion of æther was very rich in fatty matter, and contained but slight traces of moisture: four macerations in æther are almost always sufficient to dissolve all the fatty portions of the brain. After treatment with æther, the brain was subjected to the action of boiling alcohol of sp. gr. 0·817: the boiling solutions were

filtered every time, and the boilings were repeated until they gave no precipitate on cooling; there then remained a mere agglomerated fibrous mass, which M. Couerbe calls *névriline*.

The alcoholic solutions were mixed when cold, and filtered to separate the deposit, which was washed with cold æther, in order to separate the fat soluble in this liquid; this is susceptible of crystallizing, and perfectly similar to that which is found in the æthereal solution, and which is *cholestérote*.

The powder obtained from the alcohol is very white and pure: it becomes slightly translucid by drying, and has then the appearance of purified wax. The alcohol from which this white powder precipitated, gave more of it by evaporation, mixed with some fatty matter which was separated by æther. The substance dissolved by the alcohol appears to be similar to that described by Vauquelin. M. Couerbe calls it *cerebrote*.

Towards the end of the evaporation of the alcohol, a sort of fluid fat is deposited, which is not the white fatty matter; it dissolves in æther, and is converted into oil during the spontaneous evaporation of that fluid. The alcoholic residue contains only osmazome, a free acid, and some inorganic salts.

The æthereal solution was distilled, in order to obtain the æther as well as the substances which it had dissolved. These were put into a capsule, in order to finish the expulsion of the æther. The fatty matters obtained were in considerable quantity, and in the state of a whitish, homogeneous, adhesive mass, under which there was frequently whitish granular fatty matter, almost entirely formed of cerebrote; this appearance was constant in the brains of healthy persons. This fatty matter was then treated with a small quantity of æther, which dissolved it entirely when free from the whitish granular fatty matter, but only partially when that was present.

This cerebrote is always found in the mass, distinct from other elements which accompany it when extracted from healthy persons; but, on the contrary, sufficiently combined with them to become soluble in a small proportion of æther, when taken from the brain of a maniac.

When, then, æther leaves any white substance, it is separated by the filter, and when æther dissolves it entirely, it is to be evaporated to obtain more of the substance; the residue is to be subjected to the action of boiling alcohol, which dissolves the three fatty matters, among which is the cerebrote, and leaves undissolved a yellow solid fat resembling wax. The substance is almost totally insoluble in alcohol: it is to be washed several times with boiling alcohol to separate extraneous matters. The substance is not yet pure; it contains another peculiar yellow matter that is separated by cold æther, which dissolves the greater part of the mass, and leaves the other portion in the form of a brown powder. By filtering and washing this brown powder with æther, and then evaporating the æthereal solution, both these substances are obtained.

The portion soluble in æther is of a fawn colour: it cannot be sufficiently dried to be pulverized; the other portion is of a lighter colour, readily dries, and is easily reduced to a fine powder by trituration. The first M. Couerbe calls *céran-céphalote*, and the second *stéarconote*.

When the alcohol, holding the remaining matters in solution, is filtered through animal charcoal, and is exposed to spontaneous evaporation, it deposits a considerable number of crystals, which are very white and have a greasy lustre: they are to be pressed in fine linen, and the alcohol by evaporation furnishes more crystals, which are to be added to the first.

When the alcohol has been weakened by repeated evaporations, it becomes turbid, and yields crystals of the same matter mixed with red oil, which precipitates to the bottom of the vessel; it is difficult to obtain this in a pure state. There often comes down with it some solid matters which give it consistence, and which give it the appearance of fat or even several fatty matters. In order to separate the oil, it must be subjected to a slight pressure in a cloth, and alcohol poured upon it, which leaves the crystals. This alcohol is turbid on account of the oil which it contains. Some æther is to be added to it, which redissolves the oil, and renders the liquor clear, when exposed to spontaneous evaporation. A part of the æther slowly evaporates; the remainder holds the crystalline matter in solution, and allows the oil, as it is formed, to precipitate to the bottom of the liquid. When the stratum is rather thick, it is to be removed by a pipette and

filtered, and it is then pure and reddish. This oil M. Couerbe calls *éléancephol*, or oil of the brain.

As to the very abundant portion of the brain remaining after treatment with æther and alcohol, and which the author calls *névriline*, it is partly composed of albumen, coagulated globules, and of a membranous substance soluble in potash.

*Analysis of the preceding Substances.*

*Cerebrote.*—M. Vauquelin appears to have been acquainted with this substance, which he has described under the name of *white fatty matter*, and which has since been called *myclocone* by Kühn; but, according to some of the characters which M. Vauquelin has assigned to his white fatty matter, it seems that he did not obtain it pure, since he says that it is fusible and viscid, whereas cerebrote is infusible, and does not stain paper. When properly dried at a gentle heat it becomes friable, and may be pulverized; it is soluble in boiling alcohol, and but slightly so when it is cold. The process for extracting it is dependent upon this difference. It does not saponify with a solution of potash or soda, a property also observed by Vauquelin. Cerebrote is composed of

| | |
|---|---|
| Carbon | 67·818 |
| Hydrogen | 11·100 |
| Azote | 3·399 |
| Sulphur | 2·138 |
| Phosphorus | 2·332 |
| Oxygen | 13·213 |
| | 100· |

Vauquelin does not mention the existence of sulphur in it.

*Cérancéphalote.*—This substance is solid, brown, insoluble in alcohol and in water, but dissolved by 25 times its weight of cold æther. It softens by heat, and without becoming perfectly fluid; when dried it is elastic, like caoutchouc. M. Vauquelin has not mentioned this substance, but Kühn appears to have had a glimpse of it. Sulphuric acid attacks it with great difficulty; nitric acid reduces it to its elements, and converts the sulphur and phosphorus into acids. It is composed of

| | |
|---|---|
| Carbon | 66·362 |
| Hydrogen | 10·034 |
| Azote | 3·250 |
| Phosphorus | 2·544 |
| Sulphur | 1·959 |
| Oxygen | 15·851 |
| | 100· |

*Stéarconote.*—This is a fatty matter, which occurs mixed with the preceding. It is of a fawn colour, infusible and insipid, and by combustion gives an acid charcoal: Neither alcohol nor æther dissolves this substance; both the fixed and volatile oils readily dissolve it. Nitric acid takes it up after slight ebullition, and it reappears as a white fat, which is acid, soluble in boiling alcohol, and crystallizes in small laminæ, similar to margaric and stearic acids. This substance is composed of

| | |
|---|---|
| Carbon | 59·832 |
| Hydrogen | 9·246 |
| Azote | 9·352 |
| Phosphorus | 2·420 |
| Sulphur | 2·030 |
| Oxygen | 17·110 |
| | 99·990 |

*Eléancephol.*—This is a reddish liquor; its taste is disagreeable; it is soluble in æther, fixed and volatile oils, and alcohol, in all proportions. When heated, this substance dissolves the other matters of the brain readily, and these impart consistence to it. Its composition is similar to the preceding.

*Cerebral Cholesterine.*—A crystallizable fatty matter, which, according to some authors, must be the result of some morbid change. The constant and considerable quantity which M. Couerbe found in the brain induces the belief that it is a widely diffused organic animal element. It is well known that MM. Denis and Boudet have found it in the blood. The cerebral cholesterine is perfectly similar to that of the biliary calculi. Their analyses gave M. Couerbe the same results:

| | |
|---|---|
| Carbon - - - - - - - | 84·895 |
| Hydrogen - - - - - - | 12·099 |
| Oxygen - - - - - - | 3·006 |
| | 100. |

This analysis differs a little from that of M. Chevreul, as follows:

| | |
|---|---|
| Carbon - - - - - - - | 85·095 |
| Hydrogen - - - - - - | 11·880 |
| Oxygen - - - - - - - | 3·025 |
| | 100· |

*London Medical and Surgical Journal*, 17th January, 1835.

60. *Ferro-cyanate of Quinia.*—M. Bertazzi has given the following process for obtaining this salt. Take one part of sulphate of quinia, which is to be triturated in a glass mortar, so as to reduce it to a very fine powder; then add this to one part and a half of ferro-cyanate of potassa dissolved in seven parts of boiling water; after they have been well mixed, pour the compound into a vial, and expose it to a sufficient heat to cause ebullition, shaking it from time to time. The solution lets fall a substance of a greenish yellow colour, and of an oily consistence. After decanting the fluid, this precipitate is to be well washed in distilled water, and then dissolved in concentrated alcohol, and subjected to a heat of about 100° F., then filtered and slowly evaporated; this will afford a crystalline mass, corresponding to three-fourths of the quinia employed. When dried, it is of a greenish yellow colour, and very bitter taste, first giving the sensation of quinia, and then of hydrocyanic acid. It is partially decomposed by cold water, and completely so by hot; it then forms two salts, the one soluble, the other insoluble. It is very soluble in boiling alcohol.—*Am. Journ. Pharm.* from *Annali Univ. de Med.*

## MISCELLANEOUS.

61. *Letter of the Royal Academy of Medicine to the Minister of Public Instruction, in reply to his inquiry whether it would be suitable for the French Government to establish the Homœopathy Society as a legal body.*—"Sir, Homœopathy, which presents itself to you with all the delusions of novelty, is by no means a novelty in art or science. It is a system which has been erratic for twenty-five years. first in Germany, next in Prussia, afterwards in Italy, and now seeks to be introduced into France; but every where it has struggled in vain to be admitted within the pale of scientific medicine. Often, and for long periods, have the Academy undertaken the test of its worth, nay, some of the members of the Academy have dipped deeply in the inquiry of its basis, progress, practice, and effects.

"Amongst us, as elsewhere, homœopathy has been submitted to rigorous logical tests, and from the onset logic has pointed out in the system such a crowd of formal opposition to the best established facts, such a number of most striking contradictions, so many absurdities palpable to the eyes of enlightened men, that the system is merely calculated to act on the credulity of the multitude, who do not think.

"We have submitted homœopathy to the proof of investigation in facts; it has gone through the crucible of experiment, and observation has furnished us as well as others with most categorical and most severe replies to our inquiries. For though some certain cures performed, as they say, by homœopathy may be blazoned forth, we know that the biased affection of a prejudiced imagination on the one hand, and on the other the healing powers of nature, call into question their title to success. On the other side, observation has given evidence of the mortal dangers of such proceedings in those frequent and severe cases that our art is called on to treat, where the physician may do as much evil by not acting at all, as by doing too much.

"Reason and experience are then both combined in expelling forcibly from the

understanding such a system, and leaving it to rise or fall by its own merits. It is for the interest of truth, and for the advantage of systems, particularly of systems of medicine, that they should not be either attacked, defended, persecuted, or protected by power. Sound logic is their surest verdict; their natural judges are facts; their infallible touchstone is experience. To abandon them to the free action of time should be their award: time is the only arbiter in these matters; it alone does fitting justice to vain theories, and establishes those truths which ought to constitute the domain of science. Let us add that foresight, which is the wisdom of every wise administration, imperiously demands such a determination.

"Every one is acquainted with the influence of precedents; let us ask what effect the establishing of a homœopathic dispensary would have? we should have dispensaries and hospitals for the mesmerists, the brunonians, for animal magnetism, and so on for every conception of the human mind. The government will appreciate as we do the consequences of such conduct.

"From these considerations and motives the Academy are of opinion, that the government ought to refuse its sanction to the demand made in favour of homœopathia.

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62. *Forty days of the Homœopathic Clinic established in the Military Hospitals of Naples, under the direction of the Chevalier Cosme de Horatiis, and a committee of Physicians.* By the Chev. Pascule Panvini, Physician to Hospital Della Pace, &c. In a former number, (No. XXIX, for Nov. 1834, p. 254,) we gave the results of experiments made under the direction of the Russian government, to test the efficacy of the homœopathic medicine. These experiments were directed by a homœopathic physician, and were made in the wards of a hospital, selected by him. The results were conclusive against the value of the doctrine. A similar series of experiments conducted with every caution and directed by a homœopath, has been instituted at Naples by order of the government of that country, and with results even more strongly against the efficacy of the treatment. An account of these experiments was published in 1829, by Dr. Panvini, in a volume of 187 pages. This work, not having yet reached us, we must be content to extract the following account of the experiments from a notice of the work in the *Journal des Connaissances Méd. Chirurg.* for July, 1835.

"It was announced in an essay on homœopathic clinic, that a great number of cases of simple fevers had been cured in two or three days; cases of violent phlegmonous angina tonsillaris in three days; of very violent pleuro-pneumony in six days; of gastric-nervous fever, threatening typhus, in five days; a fever, with erysipelas of the head in six hours; (the subject of this case was a homœopathic physician, Dr. Laraja;) measles complicated with typhus and numerous affections, in four or five days; blennorrhagia with ulcers and orchitis, in twenty-six days; and of simple blennorrhagia, in thirteen days; palpitation of the heart, which had resisted ordinary methods, had disappeared as if by enchantment and in the twinkling of an eye, &c. Such wonders strongly excited the attention of the physicians of Naples; every one desired to witness them; a plan for experiments was presented to the king, which he approved, and ordered it carried into effect. It was decided,

"1st. That a commission should assist at the preparation and administration of the medicines: that this commission should be composed of two professors of the University belonging to the Faculty of Medicine; of two members of the Medico-Chirurgical Academy; of two members of the commission of public instruction, and the principal physicians of the hospital.

"2nd. That these commissioners, after having verified the attenuation of the homœopathic remedies, should place the said remedies in a strong box, closing securely with two different locks, of which the keys of one should be given to the director of the clinic; and of the other, to the commissioners appointed to observe the treatment.

"3d. That the clinical ward should have but one door of communication, guarded by a sentinel; that it should have all the requisites for salubrity; that it should not contain more than from fifteen to twenty beds, and that two assistant physicians, one chosen by the prescribing physician, the other by the commissioners, should keep an exact register of all that happens to the patients; the phases of their diseases; their recoveries, and the deaths, if there be any.

"4th. That the admission of patients affected with acute or chronic affections, should be at the discretion of the prescribing physician and of the commissioners, with this condition, that the prescribing physician should not be obliged to accept patients acknowledged incurable, or those whose diseases being imperfectly determined, and equivocal, ought to be considered as unfit for positive experiment.

"5th. That the commissioners having determined the nature of the disease, the prescribing physician should describe the symptoms, administer the remedy, and prescribe the regimen.

"6th. That every day, the state of each patient should be verified by the prescribing physician and the commissioners."

These rules established, the next step was to proceed to the preparation of the medicines, or, as Doctor Panvini says, their attenuation. The homœopaths have adopted for multiplier in their attenuations the number *one hundred*. Thus, when they prepare a liquid medicine, they take one drop, which they mix with a hundred of spirits of wine, this is the first attenuation or dilution; for the second dilution they take ten thousand drops, and so on, always multiplying by one hundred, as far as the thirtieth or even fortieth dilution. Doctor Panvini has calculated how much alcohol is necessary for the dilution of a medicinal drop, and how much sugar is needed for the attenuation of a grain of powdered substance, so as to arrive at the thirtieth and fortieth dilution.

"The first dilution of a drop of tincture of camomile for example, would require, as has just been mentioned, the hundred drops of alcohol; the second, ten thousand drops, or very nearly one pound; the third, one hundred pounds, or near a barrel; the fourth, one hundred barrels; and continuing in proportion, the ninth would require as much alcohol as the lake Agnano could contain; the twelfth, one hundred millions of lakes of Agnano; the seventeenth, ten millions of Adriatic seas; the thirtieth, as much alcohol as the terrestrial globe could contain, all our planetary system, and perhaps, all the stars of the first and second size that can be seen on a fine summer's night; to which must be added, for the fortieth dilution, all the constellations that can be discovered from one pole to the other."

Pulverizable substances are used in similar proportions.

For those who regard as impossible these infinite dilutions, M. Panvini indicates the abridged method followed by the Hanhemanists, and which consists in taking for each dilution, not the whole of the liquid that is to be divided, but the hundredth or the hundred thousandth part alone, so that to arrive at the thirtieth dilution, thirty little parcels will suffice, each of which will contain one hundred drops of alcohol.

It is with medicines thus divided that experiments have been made.

In the selection of patients, the commissioners were careful not to take those which appeared to need energetic and prompt treatment, so as not to expose the life of any one. They first tried whether certain patients would not recover without the application of any remedy. Ten patients were then placed under observation. The prescribing physician wished to treat them; but the commissioners decided otherwise, and the ten patients recovered. One of them had a gastric fever, the homœopathic doctor wished him to take one drop of the tincture of St. Ignatius' bean, diluted to the twelfth degree, representing the quadrillionth part of the primitive drop; which, according to the calculation of Doctor Panvini, was equivalent to the dilution in as much alcohol as ten million lake Agnanos would contain. The homœopath physician protested against the expectant practice, fearing, he said, that a day's delay would jeopardise the life of the patient; the commissioners endeavoured to encourage him, depending upon a crisis. This crisis took place during the night. The next day half rations were given, and two days afterwards the cure was complete.

Homœopathy might have been glorified for these cures, which, however, can be attributed solely to the efforts of nature.

Passing next to the cases in which the homœopathic treatment was employed, Dr. Panvini speaks of the slight affections which were cured, but without the commission being able to discover, during the treatment, any of the effects attributed to the homœopathic remedies. These cases were six in number, viz. two cases of ophthalmia, two of rheumatism, one of simple blenorrhagia, and one of slight gastric fever; all diseases in which the treatment employed produced no

effect, and which would have been cured by regimen alone, perhaps even without restrictions in this respect.

The third series consists of more serious diseases. It is entitled, *Cases which required the aid of Art, and in which the Homœopathic Medicine proved itself wholly powerless.* One of the cases in this series is given, but our limits will not allow us to relate the details. It was a case of acute pleurisy, which got worse and worse under the homœopathic treatment, and on the fortieth day, when Dr. P. ceased to assist at the clinic, the patient was in a most precarious state, with fever, and puriform expectoration streaked with blood. The physicians who saw this patient thought he might have been promptly cured by the usual treatment. The other cases in this series consisted of syphilitic diseases, ophthalmia, and enteritis, all of which became worse during the homœopathic treatment, and it was necessary to have recourse to the ordinary treatment for their cure.

Finally, in the fourth and last series, Dr. Panvini reports the experiments which he made himself with the remedies prepared by the homœopaths, without any effect being produced. Among the remedies he employed were the staves-acre, the bryony, the belladonna, the pulsatilla, &c.

On the whole, it results from forty days homœopathic treatment, made under the observation of the commission appointed by the King of Naples, that this treatment has no effect, and that it had the serious inconvenience, for some patients, of retarding the employment of remedies which might have cured them.

Nevertheless, the physician who directed the treatment, was M. de Horatiis, the physician who had boasted the preceding year, of marvellous cures, and the author of the work entitled *Essay on Homœopathic Medicine.* Alone, or surrounded by the partizans like himself of homœopathy, he performed progidies; in the presence of the commission he has not only failed to cure any one, but he allowed the condition of many patients to become aggravated, for the cure of whom it was necessary to have recourse to the ordinary treatment.

## AMERICAN INTELLIGENCE.

*Case of Cæsarian Section.* Reported by M. L. Weems, M. D.—This case occurred in Occognan, Virginia. The operation was performed by an empiric, who then enjoyed an entensive practice in the adjoining county of Fairfax, but is now no more. I was present at the operation, but, for reasons which will be obvious to all, refused to participate in it. All the particulars of the case that could be known by any but a physician, were familiarly known to all the citizens of the village.

The subject of the case was —— Payne, a mulatto, æt. about 25, of the middle stature, well formed, and the mother of three or four children. Her labours were represented as having been severe. In the spring of 1827, having completed the ninth month of her pregnancy, she was taken with severe labour pains, which, after continuing two or three days, left her, undelivered. At this time she was visited by Dr. Thornton, a highly esteemed practitioner of Dumfries, Va., who afterwards informed me that, from a hasty examination, he had concluded her pregnancy was extra uterine, but as he was compelled to leave her immediately, and could not visit her again, he had not a sufficient opportunity to form a satisfactory opinion.

From this time she continued, regularly, about every four weeks, to experience a return of the pains, which would generally last for two days, and then leave her as before.

This state of things continued until June, 1828, at which time I was invited to witness the operation, and saw her for the first time. She was now very much emaciated. For several months she had experienced an offensive discharge from the vagina, and had been more harassed by the pains.

Between twelve and fifteen months had now elapsed since the commencement of labour, and of course between twenty-one and twenty-four months since conception. Her patience was entirely gone, and she was anxious for the operation. This was performed by the oblique section, in presence of William S. Mason, Esq., of Fairfax, myself, and three or four citizens of the village, whose names I do not recollect. The epigastric artery was divided, but was secured without difficulty. Not more than one or two ounces of blood was lost, none of which was from the uterus. The uterus contained the remains of a fœtus in a half dissolved state, many of its bones being detached and bare: a large proportion of the soft parts had been dissolved by putrefaction, and had been discharged by the vagina. On removing the remains of the fœtus, the internal surface of the uterus, for several inches around the os uteri, was found lined by a crust of osseous matter, which formed a smooth and perfectly continuous surface, except at the os uteri, where there was an opening sufficiently large to admit the finger. The crust was about half a line thick, possessed considerable strength, and adhered firmly to the uterus, from which it was removed in small flakes with some difficulty. The pelvis was well formed and capacious. The uterus showed no disposition to contract. The wound was dressed in the usual way, except that two or three stitches were taken to close the incision in the uterus. At the next dressing the wound appeared unfavourable, but after the third dressing it continued to improve. The woman remained free from fever, said she was getting better every day, and was elated with the hopes of a speedy recovery. She continued to improve until about the middle of the second week, when she violated the rules of diet, by taking animal food and drinking cider; directly after which she was seized with fever, and the usual symptoms of violent inflammation of the uterus and peritoneum, and in about forty-eight hours after the attack she died. The body was not examined; nor would the examination have been interesting, as it had been fully ascertained during the operation that the osseous in-

crustation was the only obstacle to delivery: that it was a sufficient obstacle cannot be doubted.

This case is, I believe, unique. Morgagni relates a case, in his work on the seats and causes of diseases, (vol. ii. p. 423,) in which the whole substance of the uterus was converted into bone. Baillie, in his Morbid Anatomy, says, "The uterus has sometimes its substance more or less converted into bone." But these cases only relate to the uterus in its unimpregnated state. In the above case the transformation took place about the full period of gestation, and only in the mucous membrane, or in the submucous cellular tissue: whether in one or the other, or both, I cannot say. Andral, in his Pathological Anatomy, vol. i. p. 218 and 19, confines the osseous transformation to the cellular, fibrous, and cartilaginous tissues, and says he has never seen an instance in which it occurred in the submucous cellular tissue; he even appears to doubt that it has ever happened. But in the present case it is certain that the transportation did take place, either in the mucous membrane, or the submucous cellular tissue, or in both; for that it did not take place in the decidua, is evident from the fact that the cervix uteri was lined by the incrustation, and that it did not occur in the muscular coat is equally as evident; for if it had, the crust could not have been separated without the use of force that would have torn the uterus into fragments.

As to the cause of the transformation, Andral says it is generally preceded by active hyperemia, though he does not consider that state essential to it. In the present case we may safely say that the change of structure was the result of inflammation. That the woman had long laboured under slight inflammation of the mucous membrane of the cervix uteri, I think is proved by the severity of her former labours; for as there were no mechanical obstacles to delivery, the severity of those labours must in all probability have been caused by a rigid and painful state of the os uteri, resulting from inflammation of its mucous membrane.

This case, I think, should tend to lessen the dread entertained towards the Cæsarian section. For, notwithstanding this operation was performed in a rough and improper manner, and under every disadvantage, both as to the time and state of the patient, yet there was afterwards every reason to hope for a successful issue up to the time of the patient's imprudence. That the woman would have recovered, had she been more prudent, is a problem that can never be solved, but that she would have recovered, had the operation been properly performed and at the proper time, cannot be doubted, when we consider what she afterwards endured.

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*Report of a case wherein the Cæsarian Section was performed with fatal termination.* By Dr. A. Brooke.—On the 6th of the 7th month, 1835, I was called to visit P. A., in consultation with Dr. Shreve and Foot. Patient a dwarf four feet one inch high, of full muscular developement; was delicate when an infant, but has since enjoyed good health. Menstruated first about her nineteenth year; was married last autumn, and is now at 31 years of age, in labour with her first child. The previous history of the case was as follows: She was taken with the pains of labour on the night of the 2nd inst., attended by a midwife. No progress being made after the lapse of 48 hours, Dr. Foot was sent for. A deformity of the pelvis being observed, he summoned Dr. T. C. Shreve to his aid the morning of the 5th. The latter gentleman found no dilatation of the os uteri, notwithstanding the long continuance of the pains, upon his examination of the case. The deformity was apparently so great, his mind fluctuated between the propriety of an immediate resort to the cæsarian section or embryotomy, whenever the state of the parts shall permit.

The opinion of his coadjutor decided him upon the latter course, and after waiting until 11 P. M., at which time the membranes were spontaneously ruptured, and the os uteri sufficiently dilated, he attempted to enter the cranium. The umbilical cord came down—the head offering the first presentation of Baudeloque. The extreme deformity rendering it very difficult to enter the fontanelle, and quite doubtful that delivery could be effected if that were succeeded in, he very properly desisted without any violent attempt, and desired further counsel in the case. I was called early the morning of the 6th, found the patient suffering vigorous pains; pulse accelerated to 112 within a few hours, and other symptoms of febrile excitement. Upon examination I discovered considerable tumefaction

of the os tincæ and external parts; forbidding in the present state of the case any attempt to deliver by the vagina, and so great a deformity as to render me altogether doubtful of its propriety under any circumstances.

The section having been decided on, and the consent of the patient and her friends obtained, about 9 A. M. an incision was made from the umbilicus to within an inch of the os pubis, through the integuments down to the linea alba, the viscera of the abdomen being kept out of the way by the hands of assistants. An opening into the peritoneal sac having been accomplished, a director was introduced and the section finished by the bistoury. The uterus was now divided without regard to the safety of the fœtus, its previous death having been ascertained; the right shoulder and arm presented. The strong uterine contractions preventing the feet from being readily seized in the limited space allowed by the deformity, between the umbilicus and os pubis, for the incision, it was extended to the left and for an inch above the former point. After this further enlargement of the cut to reach the feet with safety, it was found necessary to remove the presenting arm at the shoulder, and the abdomen was also pierced and a portion of its contents removed. A fœtus of an average size was then extracted, and the placenta being detached was at once removed, and the dressing of the wound commenced; very little hæmorrhage occurred, and no sensible evacuation into the peritoneal cavity. Five sutures were found necessary from the extent of the wound, and adhesive straps were employed to approximate the lips of it throughout its whole extent. The patient evinced an extraordinary degree of composure and fortitude throughout the whole operation, and expressed herself greatly relieved by it. The frequency of the pulse but little accelerated; no syncope or prostration. She was ordered to be kept as quiet as possible; cool drinks and no food for the present. Called at 3 P. M., the patient easy and comfortable, has slept some, complains of no pain, and is cheerful; pulse unaltered: a slight diet, and strict quiet enjoined. 9 o'clock, A. M., the 7th, met Dr. Shreve and proceeded to dress the wound; patient has had a comfortable night; pulse 112, skin moist and cool, no other evidence of inflammatory action, except a rather increasing desire for cool drinks; appetite good—wound looks well and likely to unite in part by first intention; partial discharge of lochia per vaginam, os uteri sufficiently open to allow a finger to pass. Continue regimen prescribed; evacuate urine twice a day with catheter, and administer mild enemata to move the bowels: spirits nitr. dulc., half a tea-spoonful every two hours. 7 o'clock, P. M., some change for the worse; considerable tumefaction of the abdomen, although no appreciable tenderness; partial hæmorrhage from the wound externally; pulse slightly accelerated but reduced by a small bleeding. By 10 P. M., the tumefaction so far increased as to threaten to tear the sutures; renewed adhesive straps of a greater length: some nausea and disposition to vomit. Suspend spirits nitr. dulc., and give some effervescing draughts: rendered more comfortable by the dressings.

8th, 7 o'clock, A. M., but partial evacuations from the bowels as yet procured by the frequently repeated enemata; patient in great distress; pulse in statu quo; surface cool, but swelling still increasing; no tenderness as yet upon pressure: refers her sufferings entirely to the state of her bowels. Suspend effervescing draughts and give every hour a tea-spoonful of mucilage of gum arabic, in which was suspended a small portion of carb. ammonia and camphor combined with magnesia. 4 P. M., no evident change except occasional vomiting of a greenish fluid, and a partial evacuation of fœcal matter per anum with great discharge of wind, from which much relief was obtained. Pains throughout have been of a paroxysmal character, with intervals of ease. To a bystander, uninformed of the fact that an operation had been performed, the symptoms would clearly have indicated a constriction of the intestine previous to the occurrence of active inflammation; pulse full, regular, and not greatly accelerated in frequency: continue previous treatment.

9th, 7 o'clock, A. M., patient still growing worse; swelling increasing; pulse unaltered; vomiting at intervals through the night, attended with great discharges of flatus by the mouth, and per anum, giving great relief; enemata still inefficient in producing proper alvine evacuations; an attempt to evacuate the flatus by the introduction of a long stomach tube into the rectum failed, owing to the deformity of the sacrum preventing its insertion. The case appearing desperate, no other

notice need here be taken of the further treatment. She lingered till 8, A. M., of the 11th, possessing her faculties unimpaired to the last.

*Post-mortem Examination, three hours after death.*—Leave having been granted for a limited examination, the following results were noted. External appearance: great bloating of the abdomen; viscera protruding between the sutures; no adhesion of the wound in any part of its extent. By puncturing the distended stomach, colon, and rectum, a great discharge of fetid gas ensued, the tumour subsided, and rendered the further examination more practicable. Internal changes: no perceptible traces of effusion into the abdomen; peritoneum slightly tinged with red on different parts of its surface; the blood-vessels of the intestines engorged throughout their whole extent; inflammation of a high grade and some gangrenous spots on the colon; rectum highly inflamed, but not gangrenous; small intestines in same condition; no stricture discovered, though the presence of the friends of the deceased, and the limited nature of the examination they permitted, prevented a minute research; bladder empty and in its normal condition; uterus occupying its natural situation, greatly tumefied; the parietes of body and fundus thickened to more than half an inch; outer coat hard and unyielding; inner coat softened by gangrene; no adhesion of its wound; right fallopian tube and ovary highly inflamed; left one nearly in its healthy condition. The deformity consisted in a projection of the sacrum reducing the antero-posterior diameter of the pelvis to one inch and three-fourths. These are the general facts presented by the examination, which was necessarily limited, under the circumstances of the case.

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*Case of extraordinary Constipation.* By GEORGE W. DENIG.—Vandle Gooden, adult, has been of a costive habit for some years, passed generally no more than two or three evacuations per week. Is remarkable for the prominency of his abdomen, particularly on the left side. His parents inform us he has been irregular in his evacuations ever since his birth.

In July last, the number of evacuations were diminished to one every seven days, and that of an ordinary size. This condition continued from the middle of July until the 7th of November, three months and twenty-two days, without very materially deranging his health or appetite, according to his own account.

At the time last mentioned, he passed three stools of ordinary amount a day, for three successive days, which gave him but little relief from the pain and distension he had begun to complain of.

After the 7th of Nov. up to the time he came under my care, (being twenty-eight days,) he has had but one small evacuation. Still eats his meals regularly; has a tolerable appetite. He has never vomited, but if his head lies low during sleep, the food will be forced up into his mouth. Upon examination I find the parietes of the abdomen distended to their utmost, and of extraordinary dimensions; the prominency inclining very much to the left side, or region of the descending colon and rectum.

December 5th. An enema of soap and warm water with a little salt was administered at two o'clock, which brought away a considerable quantity of fœces. The enema was repeated at six o'clock, and passed off after dark with the same result.

December 7th. No perceptible diminution of size; not quite so much pain and uneasiness. Administered an enema of one quart of the same article, which was also followed by the same result as before.

On the next day an enema of one quart was injected through a large male catheter, introduced about six inches. This was passed away in the night, with a considerable quantity of fœces, in which were 50 or 60 cherry stones which he had swallowed about the middle of July. On the 8th the same course was pursued with beneficial results.

Being anxious of ascertaining to what cause his disease was to be attributed, I took a gum-elastic stomach tube, and attempted to introduce it up the intestine, but found it impossible to pass it more than six inches.

Finding all efforts fruitless, and the irritability of the intestine considerable, we abandoned our intention of introducing it any farther, under the impression that either a stricture or unnatural fold occupied the place of resistance. While the tube was introduced about six inches, an enema of half a gallon of tepid water

was administered, and the patient directed to take one tea-spoonful of Rochelle salts three times a day.

10th. Passed three large stools and feels easy.

12th. Six o'clock, P. M., administered an enema of five pints of tepid water through the tube passed up about six inches. At 10 o'clock was sent for and found the patient enormously distended with gas; abdomen as large as it had ever been, and breathing a good deal oppressed, and the patient unable of himself in any manner to expel the flatus. I passed the instrument up about the same distance as before, and immediately the gas escaped with force.

For four days the common syringe was used twice a day, during which time he passed several large stools. For ten days he has been allowed to eat nothing more than gruel and chocolate. He is now materially altered in appearance, and feels comparatively easy.

17th. Introduced the stomach tube as before and forced up one gallon and one pint of tepid water. A part of this must have passed the stricture or obstruction, as it cannot be possible that such a quantity could have been contained in the pelvis. In the evening of the day he passed half a gallon of the enema very much thickened with the contents of the bowels. At 9 o'clock I found the abdomen as much distended with gas as before, and the patient in great misery, and unable to pass it. The tube was again introduced and the patient immediately relieved. This gas was similar to the other, and had the smell of sulphurated hydrogen.

On the 18th he was directed to take a table-spoonful of the oleum ricini suspended in mucilage of gum-arabic, three times a day, as no effect followed the use of the salts which he had been taking for four or five days. On the evening of this day the patient had several large stools, the remains of the injections previously administered.

19th. Has passed three quarts of fœces during the night. Continues the oil, and is still more reduced in size; has a good deal of uneasiness in the bowels, caused by the medicine. By this time, as near as the patient and I can calculate, he has passed somewhat more than half a bushel of fœces beside water used for injections.

On the 20th the castor oil began to operate, and he had three large stools.

21st. Has passed almost four quarts of consistent fœces through the night.

22nd. Has passed since last evening a peck of fœces by measure, without the aid of an enema.

24th. Has evacuated another peck since yesterday morning.

25th. The medicine still continues to operate, but he does not any longer measure the evacuations. The abdomen is reduced to its ordinary dimensions.

28th. Patient can walk about and is left to his own management.

January 6th. The patient called to see me and says he has an evacuation every other day, with the use of the pills he is now taking occasionally.

I do not know of there being a case on record equal to this, either in duration or danger, and though it is remarkable that the patient did not die of some inflammatory action, the danger was considerably lessened by the length of time the disease had been in existence, the slow and gradual progress of the distension, and the consequent insensibility of the intestine which diminished materially, I have no doubt, the liability of the intestines to irritation and inflammation.

*M'Connellsburg, Bedford Co., Penn., Jan. 14th*, 1836.

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*Case of Local Pulsation.* By Elisha Bartlett, M. D.—I was invited, a few days since, by Dr. Duesbury, of this town, to see a patient suffering with violent throbbing of the temporal arteries. The patient is a chlorotic girl. All that could be ascertained of her previous history, in regard to disease, was that she had been repeatedly bled for what her physicians had called *brain fever*. At these times, she says, the beating in the temples was present. On examining the temporal arteries, I found them pulsating with a very powerful expansive throb, like that of an aneurism. The strength of the arterial beats was not uniform. The vessel seemed to swell up under the touch, like an artery as large as the little finger, with its circumference indistinctly defined. It resembles, somewhat, the swelling out of the temporal muscle when the lower jaw is strongly pressed against the upper. Every pulsation was painful, and the action of coughing, although in-

stinctively suppressed by the patient, was accompanied by great aggravation of the pain in the temples. But the most curious circumstance in this case remains to be stated. *The pulsations in the temporal arteries were not synchronous with those of the heart.* The average number of pulsations at the wrist, repeatedly counted, was *one hundred and six*; the average number in the temporal artery was *eighty*. The pulse at the wrist was feeble and soft; the action of the carotids corresponded in force and frequency with that of the radials. By firmly compressing the temporal artery, low down and anterior to the ear, where its action was very much less violent, the powerful throbbing of the temples was arrested, and the artery flattened away like an aneurism emptied in the same manner. I say nothing of the general symptoms, as I mention the case to you chiefly as a striking and unequivocal instance of pulsation in an artery independent of the action of the heart.

[This is an interesting case, and manifestly one of anemia, in which condition pulsation of certain arteries often occurs, and frequently to such an extent as to have led to the belief of the existence of aneurism of those vessels. (See Art. *Anemia*, in the American Cyclopedia of Practical Medicine and Surgery.)—Ed.]

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*Extract of a Letter from* Dr. Charles Gordon, *of Lowell, now in Paris, to* Dr. Elisha Bartlett. Communicated by the latter.—"Louis is, I should say, 45 years old. He is tall, perhaps 6 feet, of slight figure, and exceedingly active. His head is large, and, considered phrenologically, sustains the science. His forehead is high, broad and full, but not prominent; the fulness continuing backwards to the crown. Thus we have his remarkably sagacious, discriminating, and reasoning mind, sustained by conscientiousness. He is deficient in imagination, fortunately for science. His eye is hazel, very bright and piercing: he is near-sighted, and wears spectacles." * * * * * *

"At the meeting of the faculty, at the opening of the School of Medicine, Broussais gave an introductory lecture. It was supposed by many that he would take this favourable occasion to sustain his doctrines in his violent and spirited manner; but the distinguished reformer did not this time compromise his own dignity, or disregard that of the occasion by any harsh or extravagant expressions in his own support or in reference to his opponents. He eulogized the character of the celebrated Dupuytren in a very handsome manner; but such is the devotion of the French to the memory of this great man, that it is not in the power of language to express their feelings. In the course of his remarks he made known all the details of the foundation of the chair of Pathological Anatomy. These details revealed the fact that Orfila, profiting by the generous intentions of Dupuytren, had been the direct agent of accomplishing one of the greatest works of the present time for the promotion of the science of medicine. It is well known that Dupuytren, in his last days, declared his intention of bequeathing to the faculty the sum of 200,000 francs, to found a chair of Pathological Anatomy. Orfila wished him to devote this sum to the formation of a *museum* of pathological anatomy. At first this proposition was rejected by Dupuytren, but afterwards accepted. He died, however, without having made the necessary alterations in his will. Orfila represented the circumstances to the Ministere Royal Conséil, and suggested that it would be highly honourable to them to execute the intentions of the illustrious surgeon by providing the sum necessary for the construction of the museum, which should take the name of *Musée Dupuytren*. They complied with his suggestions, and Mons. and Madame Beaumont furnished, also, the sum of 200,000 francs in aid of the work. This was in the middle of June last, and by the 20th July the funds were placed in the hands of Orfila. On the 3d of November the work was accomplished. The museum contains a beautiful display of morbid specimens. They are admirably arranged, not only to be seen but in a convenient manner for study." * * * *

"At present, a very interesting *concours* is going on for the Chair of Surgery, vacant by the death of Dupuytren. The *concourants* are Sanson, Blandin, Bérard, Jobert, Lépellétier and others less celebrated. By the promotion of Roux to Hôtel Dieu, and of Velpeau to La Charité, the vacancy is at La Pitié. Blandin or Sanson, it is supposed, will succeed."

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*A Case of Introsusception, in which an operation was successfully resorted to, by*

JOHN R. WILSON, M. D., communicated by Mr. W. W. Thompson, Student of Medicine.—The facts of the following case were recalled to my mind by the remarks of the Professor of Anatomy and Surgery, in his late lecture on the diseases of the intestines. The propriety of an operation in cases of introsusception, where other remedies had failed, was suggested by the professor, though he gave no directions concerning the mode, leaving that to the judgment and skill of the operator.

This operation, novel, I believe, in the annals of surgery, was performed by my friend and preceptor, John R. Wilson, M. D., then of Rutherford county, Tennessee, now of Mississippi, between the 25th and 30th of December, 1831, and with complete success. The following report of the case is given from memory, but is substantially correct. It is presumed that Dr. Wilson will, at some future day, favour the profession with a more circumstantial report, which cannot fail to attract considerable attention.

The subject of the operation was a negro man, aged about twenty years, the property of Mr. Charles Dement. The patient had laboured for seventeen days under bilious colic, and stercoraceous vomiting, and the other more alarming symptoms of this disease, had appeared. All the active purgatives were administered in vain, and, on the evening before the operation was resolved upon, as a dernier resort, some ounces of crude mercury were given. The constipation remaining, with the other formidable appearances, it was plain that nothing but the knife could save the patient.

The operation was performed in the following manner. An incision was made along the linea alba, commencing above the umbilicus and extending two or three inches below it, being in all about five inches in extent. The bowels being protruded through the wound, that portion involved in the stricture came into view. It was found to be in the *ileum*. The bowel was grasped above and below the point of obstruction, and after several efforts of considerable force, the adhesion gave way. The exertion necessary to break up the attachments, it was feared, might lacerate the intestine, but no such accident followed. The bowel strangulated was of a dark livid appearance, evidently approaching to gangrene, and of double its ordinary size. The vessels of the omentum were also deeply engorged with black blood, apparently stagnant. The parts seemed to be on the verge of mortification. After returning the intestines into the abdomen, having carefully excluded the atmosphere during the operation by a warm, moist cloth spread over the viscera, the wound was made secure by a few stitches with the needle, and adhesive strips. The patient was put to bed, and in a very short time voided the mercury which he took the evening before. His recovery was rapid and entire.

The success of this case, in which the operation was so long deferred, and at last performed under such unfavourable circumstances, warrants the propriety of resorting to it in the disease, and proves that relief may occasionally be afforded by this means, when all others have failed.—*Transylvania Journ. of Med.* Dec. 1835.

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*Ryan's Manual of Midwifery.*—We are pleased to see an American edition of this valuable work. Dr. Ryan is well known to the profession in this country, and his writings are in high favour among us. The opinion expressed of his Manual of Midwifery by Dr. Dewees, (see this Journal, Vol. V. p. 466,) whose judgment on this subject will not be contested, is of the most flattering character. This work is, in fact, the most erudite one on obstetric science in our language, and we have no doubt that the publishers, Messrs. Smith and Harrington, of Burlington, will find their enterprise a profitable one.

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Dr. JOHN H. STIEL's *Annual Address before the Medical Society of the State of New York.*—We have read this address with much pleasure. It contains some important truths, and we shall take another opportunity, when we have more space at our disposal, to advert to them.

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*Professor* WOOD's *Address to the Medical Graduates of the University of Pennsylvania.*—The Medical Faculty have done wisely in publishing this address. It presents an interesting sketch of the history of the ancient and venerable institu-

tion in which Dr. Wood occupies a chair; written in a neat and perspicuous style, showing it to be the production of a scholar, and of a gentleman of taste and feeling. The entire absence of gasconade, and its not being composed in the "Fourth-of-July-oration-style," strongly distinguish it from the major part of the productions of an analogous character which are annually put forth in this country. It should be widely circulated.

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Dr. T. Y. Simons' *Introductory Lecture.*—This is an eloquent lecture, containing a just view of the exalted rank of our Divine Art, and some judicious observations on medical education, written in a terse and vigorous style. Like the address last noticed, it is also honourably distinguished from similar productions with which our table is crowded, by the negative characters, indicated in the preceding paragraph.

—

Wallace's *Essay on the Structure of the Eye, with reference to Natural Theology.*—This is a neat little volume of fifty-two pages, illustrated with twenty-one well-executed wood cuts. We recommend it to those who are curious on the subject.

—

*Dunglison's Physiology.*—A second edition of this valuable work, with additions and improvements, has been issued by Messrs. Carey, Lea & Blanchard.

—

*University of Pennsylvania.*—The number of medical students in attendance on the Lectures, during the session 1835-6, was 398.

—

*Transylvania University.*—The number of the Medical Class in this school, during the session 1835-6, was 260.

—

*Cincinnati College.*—Sixty-six students attended the Medical Lectures in this institution during the session 1835-6.

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*Medical Institution of Geneva College.*—During the session of 1835-6, 68 students were in attendance on the Lectures. The number of graduates last year was 6.

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Errata.

No. XXXIV.—Page 541, line 58, for "splenic nervous system," read "splenic venous system."

542, „ 16, for "of an inch in diameter," read "of the eighth of an inch in diameter."

## QUARTERLY MEDICAL ADVERTISER.

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In consequence of the extended circulation of the American Journal of the Medical Sciences, the Proprietors intend, in compliance with the wishes of many of their friends, to affix to each No. a Sheet of Advertisements. All Booksellers, Medical Gentlemen, and others desirous of taking advantage of this mode of announcement, will please address their Advertisements to Carey, Lea & Blanchard, Philadelphia, by the 10th day of the month preceding that of the publication of the Journal, viz. on 10th July, 10th October, 10th January, and 10th April.

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## UNIVERSITY OF PENNSYLVANIA.

### MEDICAL DEPARTMENT.

The Lectures commence annually on the first Monday of November, and continue until the ensuing March.

| | |
|---|---|
| *Theory and Practice of Medicine.* | By Nathaniel Chapman, M. D. |
| *Institutes of Medicine.* | By Samuel Jackson, M. D. |
| *Special and General Anatomy.* | By William E. Horner, M. D. |
| *Materia Medica and Pharmacy.* | By George B. Wood, M. D. |
| *Chemistry.* | By Robert Hare, M. D. |
| *Surgery.* | By William Gibson, M. D. |
| *Obstetrics and Diseases of Women and Children.* | By Hugh L. Hodge, M.D. |

Clinical Medicine and Surgery taught by the Prescribing Medical Officers at the Blockley Hospital, under the Guardians of the Poor, and at the Pennsylvania Hospital.

W. E. HORNER, M. D.
*Dean of the Medical Faculty.*

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## MEDICAL INSTITUTION
OF
## GENEVA COLLEGE.

The Medical Lectures will commence on the first Tuesday of October, and continue sixteen weeks.

| | |
|---|---|
| *Chemistry.* | By E. Cutbush, M. D. |
| *Institutes and Practice of Medicine.* | By Thomas Spencer, M. D. |
| *Anatomy and Physiology.* | By W. Parker, M. D. |
| *Principles and Practice of Surgery.* | By John George Morgan, M. D. |
| *Obstetrics and Materia Medica.* | By Charles B. Coventry, M. D. |
| *Medical Jurisprudence and Botany.* | By A. Coleman, M. D. |

A spacious building for Medical Lectures has been erected within the last year, well adapted to answer all the purposes for Medical Instruction;

and every exertion will be made to render the course as thorough and complete, as that in any other Institution.

The price for Lectures is $55.

Good board, room rent, lodging, fuel, and light, can be procured for $2 per week.

E. CUTBUSH, M. D.,
*Dean of the Medical Faculty.*

JOHN GEORGE MORGAN, M. D., *Registrary.*

Dr. Spencer is in Europe; but will return in season to deliver his course in October.

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## UNIVERSITY OF PENNSYLVANIA.

### MEDICAL DEPARTMENT.

*At a Public Commencement, held in the Hall of the Musical Fund Society, Locust Street, on Saturday, March 26th, 1836, the Degree of Doctor of Medicine was conferred by the Rev. John Ludlow, D. D., Provost, upon the following Gentlemen, Students of this Institution.*

| NAMES. | RESIDENCE. | SUBJECT OF ESSAY. |
|---|---|---|
| Ashe, William C. | Alabama, | Cholera Infantum. |
| Atkinson, Joseph N. | Virginia, | Acute Dysentery. |
| Addison, Samuel R. | Maryland, | Functions of the Brain. |
| Burton, Selden M. | Virginia, | Functions of Placenta. |
| Bonner, Moses H. | Tennessee, | Congest. Fev. of Tennessee. |
| Baker, George R. | Delaware, | Dropsy. |
| Brown, John R. | Pennsylvania, | Gastro-enteritis. |
| Beale, Joseph, Jr. | Pennsylvania, | Cataract. |
| Banks, George G. | Virginia, | Caries of Spine. |
| Brown, Raleigh T. | Virginia, | Menstruation. |
| Barclay, John O'C. | Pennsylvania, | Phagedæna Gangrenosa. |
| Bean, Addison | Georgia, | Dysentery. |
| Bedford, Charles R. | Alabama, | Typhus. |
| Bailey, William M. | South Carolina, | Bilious Fever. |
| Biddle, John B. | Pennsylvania, | Follicular Ileitis. |
| Brown, John N. | Virginia, | Gonorrhœa. |
| Boulware, William P. | Virginia, | Gonorrhœa. |
| Butler, John B. | Virginia, | Chronic Hepatitis. |
| Boykin, Anthony G. | Virginia, | Dysentery. |
| Boyer, Valentine A. | Illinois, | Cholera. |
| Cauthorn, Richard S. | Virginia, | Dyspepsia. |
| Craighead, Joseph E. | Tennessee, | Dyspepsia. |
| Chazal, John P. | South Carolina, | Cancerous Affections. |
| Cary, Samuel B. | Virginia, | Cholera Infantum. |
| Couch, Charles F. | Virginia, | Acute Peritonitis. |
| Chase, Heber | New Hampshire, | Improvements in the Truss for the radical cure of Hernia. |
| Comly, Isaac | Pennsylvania, | Scutellaria lateriflora. |
| Draper, John W. | Virginia, | Glandular Action. |
| Dorn, Densley | South Carolina, | Physiological and Pathological Man. |
| Dashiell, L. Fairfax | Kentucky, | Tubercle. |
| Dandridge, Charles F. | Virginia, | Acute Inflammat. of Lungs. |

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|---|---|---|
| Dubs, Samuel R. | Pennsylvania, | Acute Peritonitis. |
| De Leon, D. Cohen | South Carolina, | Circulation. |
| Davis, Joseph J. | Louisiana, | Malaria. |
| Earle, M. Baylis | South Carolina, | Intermittent. |
| Elmer, William | New Jersey, | Tympanites Intestinalis. |
| Everett, Charles D. | Virginia, | Effect of diseased Mouth on the general system. |
| Frisby, Asa | Mississippi, | Fracture of Patella. |
| Foster, Archibald T. | Virginia, | Tic Doloureux. |
| Guillou, Charles F. B. | Pennsylvania, | Rhonchi. |
| Gorham, Daniel B. | Louisiana, | Rubeola. |
| Gibson, Charles Bell | Pennsylvania, | Apoplexy. |
| Gilliams, Lewis S. | Pennsylvania, | Natural History of the Human Teeth. |
| Hepburn, James C. | Pennsylvania, | Apoplexy. |
| Hart, Alexander C. | Pennsylvania, | Effects of Vaccination. |
| Harlan, Caleb | Delaware, | Scrofula. |
| Hatch, Benjamin L. | Mississippi, | Datura Stramonium. |
| Hulme, D. Franklin | England, | Use of the Trephine in Injuries of the Head. |
| Harris, Bennet | Georgia, | Modus agendi of Poisons. |
| Hamersly, Sylvanus S. | Pennsylvania, | Scarlatina. |
| Hope, Matthew B. | Pennsylvania, | Pharyngitis. |
| Hope, William | Pennsylvania, | Lobelia syphilitica. |
| Johnston, William | Georgia, | Delirium Tremens. |
| Jump, Isaac | Delaware, | Erysipelas. |
| Johnston, W. Poyntell | Pennsylvania, | Pathol. of Metast. Abscesses. |
| Kyle, Harvey | Virginia, | Opium. |
| Kilgore, William | Louisiana, | Carbuncle. |
| Kurtz, Jacob H. | Pennsylvania, | Cynanche Parotidea. |
| Kennedy, Jervis H. S. | South Carolina, | Diseases of Antrum. |
| Kemper, George W. Jr. | Virginia, | Burns. |
| Lawrence, Enoch C. | Georgia, | Evidences of Sympathy. |
| Lafferty, William L. | Pennsylvania, | Convulsiones Gravidarum et Parturientium. |
| Lindsey, Caleb | Alabama, | Epidemic Gastric Fever of South Alabama. |
| Lindoe, Robert F. | England, | Cæsarian Section. |
| Ludwig, Charles A. | Pennsylvania, | Phenomena of Inflammation. |
| Means, Thomas | South Carolina, | Croup. |
| Martin, William | Virginia, | Febris Biliosa. |
| Manning, George F. | Alabama, | Opium. |
| Morehead, Bushrod W. | Kentucky, | Modus operandi of Med. |
| Miller, Samuel | Virginia, | Acute Peritonitis. |
| Moncure, John E. | Virginia, | Capillary Circulation. |
| Maxwell, Charles D. | Delaware, | Importance of Toxicological Knowledge. |
| Martin, John A. | Pennsylvania, | Acute Gastritis. |
| Marsh, John H. | Pennsylvania, | Phthisis Pulmonalis. |
| Mackey, Alexander L. | Dist. of Columbia, | Hepatitis. |
| M'Coull, James | Virginia, | Hysteriotomy. |
| Nelson, Benjamin D. | Virginia, | Dyspepsia. |
| Nichol, George H. | Maine, | Sympathy. |

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|---|---|---|
| Norfleet, William B. | Tennessee, | Cholera. |
| Page, Thomas S. | New Jersey, | Absorption. |
| Philips, Etheldred | Florida, | Congestion. |
| Pitts, James M. | South Carolina, | Acute Hepatitis. |
| Patterson, Henry H. | Pennsylvania, | Italian doctrine of Counter-stimulus. |
| Powell, Albert | Virginia, | Gonorrhœa. |
| Parrish, Robert G. | Virginia, | Acute Infantile Arachnitis. |
| Pena, Auxencio Maria | Venezuela, S. Am. | Elephantiasis. |
| Quarles, Charles | Virginia, | Cynanche Trachealis. |
| Rogers, Lewis | Kentucky, | Delirium Tremens. |
| Reid, William S. | Tennessee, | Laryngo trachitis. |
| Robinson, Robert Em. | Virginia, | Cholera Infantum. |
| Rogers, Robert E. | Pennsylvania, | Experimental Thesis. |
| Rowand, John Randolph | Pennsylvania, | Hittell's Truss in treatment of Hernia. |
| Simpson, Josiah | New Jersey, | Effects of tight lacing. |
| Stillé, Alfred | Pennsylvania, | Tabes Dorsalis. |
| Sproat, William | Pennsylvania, | Precocity of Intellect. |
| Scruggs, Vincent V. | Virginia, | Scarlatina. |
| Swann, George F. | Virginia, | Scrofula. |
| Tappan, Benjamin Jr. | Ohio, | Vis Medicatrix Naturæ. |
| Thweatt, John Jr. | Virginia, | Gonorrhœa. |
| Turner, Henry E. | Rhode Island, | Causes of Fever. |
| Taylor, Thomas B. | North Carolina, | Acute Peritonitis. |
| Taliaferro, Horace D. | Virginia, | Rubeola. |
| Terrell, Edward B. | Georgia, | Exostosis. |
| Taylor, Thomas B. | South Carolina, | Suspended Animation. |
| Taul, Jesse C. | Kentucky, | Scarlet Fever. |
| Terrell, Solomon R. | Mississippi, | Circulation. |
| Van Rensselaer, Alexan. | New York, | Functions of Liver. |
| Wormeley, Carter W. | Virginia, | Vaccina. |
| Wootten, Hardy V. | Georgia, | Malignant Cholera. |
| Wallace, Edward | Pennsylvania, | Medical Character and Responsibility. |
| Wolf, Bennet A. | Pennsylvania, | Intermittent Fever. |
| Wallace, Joshua M. | New Jersey, | Pleurisy. |
| Walker, Joseph | Bermuda, | Hydrops. |
| Wallace, Robert M. | Maryland, | Hepatitis. |
| Wilson, John T. | Virginia, | Cynanche Trachealis. |
| Wood, Richard | Virginia, | Scarlatina. |
| Ward, William W. | North Carolina, | Remittent Fever. |
| Young, William | Ireland, | Dyspepsia. |

After the Degrees were conferred a charge was delivered to the Graduates by George B. Wood, M. D., Professor of Materia Medica.

The following resolution of the Medical Faculty was announced, to wit: that the Essay of John W. Draper of Virginia, on Glandular Action, and of Robert E. Rogers of Pennsylvania, on the Blood, &c. &c., be published at the expense of the Medical Faculty as a mark of the estimation in which they hold those productions.

[The first essay is published in the present number of this Journal; the second will appear in our next number.—Ed.]

The following Gentlemen received the same Degree, at the Commencement in July, 1835.

| NAMES. | RESIDENCE. | SUBJECT OF ESSAY. |
|---|---|---|
| Brown, Thomas | Pennsylvania, | Dysentery. |
| Clarke, Richard | Virginia. | Puerperal Fever. |
| Davies, John B. | Virginia, | Acute Hepatitis. |
| Hetzel, J. Newton | Pennsylvania, | Colic. |
| Holmes, Jansen W. | Mississippi, | Intermittent Fever. |
| Marx, Frederick | Virginia, | Unavoidable Uteri. Hæmor. |
| Roland, William S. | Pennsylvania, | Hernia Cerebri. |
| Sloane, Bryan W. | North Carolina, | Cholera Infantum. |
| Stubbs, Richard | West Indies, | Peculiar. of Female System. |
| Turner, James B. | Alabama, | Dyspepsia. |
| Turpin, Thomas J. | Maryland, | Hæmoptysis. |
| Walker, Percy | Alabama, | Elephantiasis. |
| White, J. Hamilton | New Jersey, | Asiatic Cholera. |
| Wickersham, Morris S. | Philadelphia, | Dysenteria. |

W. E. HORNER, M. D., *Dean.*

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TO THE MEDICAL PROFESSION.

IMPROVED SURGEONS' TRUSSES,

FOR THE IMMEDIATE RELIEF AND RADICAL CURE

OF

HERNIA AND RUPTURE,

INVENTED

*By HEBER CHASE, M. D.*

*Examined and approved by the Committee of the Philadelphia Medical Society appointed to investigate the merits of the various instruments now before the public for the treatment of Hernia.*

REFERENCE.

HEBER CHASE, M. D., having applied to the undersigned for the privilege of making reference to them in testimony of the value of his improvements in the form of Trusses, and in the construction of instruments designed to produce the greatest possible security in the retention of Hernia in its several forms, and the most promising chance of radical cure in this disease, we have no hesitation in permitting the required reference.

The subject has engaged the attention of the Philadelphia Medical Society, and the report of the special committee of that body, appointed on the occasion, is alike favourable to the claims of the instruments, and to the honourable and strictly professional course of the inventor.

REYNELL COATES, M. D.
WILLIAM E. HORNER, M. D.
SAMUEL JACKSON, M. D.
WILLIAM GIBSON, M. D.
THOMAS HARRIS, M. D.
HENRY BOND, M. D.
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SAMUEL GEORGE MORTON, M. D.
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GRANVILLE SHARP PATTISON, M. D.
JOSEPH HARTSHORNE, M. D.
BENJAMIN H. COATES, M. D.
WILLIAM RUSH, M. D.
*Philadelphia.*
WILLIAM PARKER, M. D., HENRY H. CHILDS, M. D., *Massachusetts.*
JOHN EBERLE, M. D., *Ohio.*

For the information of those labouring under ruptures, Dr. Chase is preparing, and will shortly publish, a popular work upon this complaint, with illustrative drawings; and in order to put those surgical practitioners who

| | | |
|---|---|---|
| Norfleet, William B. | Tennessee, | Cholera. |
| Page, Thomas S. | New Jersey, | Absorption. |
| Phillips, Etheldred | Florida, | Congestion. |
| Pitts, James M. | South Carolina, | Acute Hepatitis. |
| Patterson, Henry H. | Pennsylvania, | Italian doctrine of Counter-stimulus. |
| Powell, Albert | Virginia, | Gonorrhœa. |
| Parrish, Robert G. | Virginia, | Acute Infantile Arachnitis. |
| Pena, Auxencio Maria | Venezuela, S. Am. | Elephantiasis. |
| Quarles, Charles | Virginia, | Cynanche Trachealis. |
| Rogers, Lewis | Kentucky, | Delirium Tremens. |
| Reid, William S. | Tennessee, | Laryngo trachitis. |
| Robinson, Robert Em. | Virginia, | Cholera Infantum. |
| Rogers, Robert E. | Pennsylvania, | Experimental Thesis. |
| Rowand, John Randolph | Pennsylvania, | Hittell's Truss in treatment of Hernia. |
| Simpson, Josiah | New Jersey, | Effects of tight lacing. |
| Stillé, Alfred | Pennsylvania, | Tabes Dorsalis. |
| Sproat, William | Pennsylvania, | Precocity of Intellect. |
| Scruggs, Vincent V. | Virginia, | Scarlatina. |
| Swann, George F. | Virginia, | Scrofula. |
| Tappan, Benjamin Jr. | Ohio, | Vis Medicatrix Naturæ. |
| Thweatt, John Jr. | Virginia, | Gonorrhœa. |
| Turner, Henry E. | Rhode Island, | Causes of Fever. |
| Taylor, Thomas B. | North Carolina, | Acute Peritonitis. |
| Taliaferro, Horace D. | Virginia, | Rubeola. |
| Terrell, Edward B. | Georgia, | Exostosis. |
| Taylor, Thomas B. | South Carolina, | Suspended Animation. |
| Taul, Jesse C. | Kentucky, | Scarlet Fever. |
| Terrell, Solomon R. | Mississippi, | Circulation. |
| Van Rensselaer, Alexan. | New York, | Functions of Liver. |
| Wormeley, Carter W. | Virginia, | Vaccina. |
| Wootten, Hardy V. | Georgia, | Malignant Cholera. |
| Wallace, Edward | Pennsylvania, | Medical Character and Responsibility. |
| Wolf, Bennet A. | Pennsylvania, | Intermittent Fever. |
| Wallace, Joshua M. | New Jersey, | Pleurisy. |
| Walker, Joseph | Bermuda, | Hydrops. |
| Wallace, Robert M. | Maryland, | Hepatitis. |
| Wilson, John T. | Virginia, | Cynanche Trachealis. |
| Wood, Richard | Virginia, | Scarlatina. |
| Ward, William W. | North Carolina, | Remittent Fever. |
| Young, William | Ireland, | Dyspepsia. |

After the Degrees were conferred a charge was delivered to the Graduates by George B. Wood, M. D., Professor of Materia Medica.

The following resolution of the Medical Faculty was announced, to wit: that the Essay of John W. Draper of Virginia, on Glandular Action, and of Robert E. Rogers of Pennsylvania, on the Blood, &c. &c., be published at the expense of the Medical Faculty as a mark of the estimation in which they hold those productions.

[The first essay is published in the present number of this Journal; the second will appear in our next number.—Ed.]

The following Gentlemen received the same Degree, at the Commencement in July, 1835.

| NAMES. | RESIDENCE. | SUBJECT OF ESSAY. |
|---|---|---|
| Brown, Thomas | Pennsylvania, | Dysentery. |
| Clarke, Richard | Virginia. | Puerperal Fever. |
| Davies, John B. | Virginia, | Acute Hepatitis. |
| Hetzel, J. Newton | Pennsylvania, | Colic. |
| Holmes, Jansen W. | Mississippi, | Intermittent Fever. |
| Marx, Frederick | Virginia, | Unavoidable Uteri. Hæmor. |
| Roland, William S. | Pennsylvania, | Hernia Cerebri. |
| Sloane, Bryan W. | North Carolina, | Cholera Infantum. |
| Stubbs, Richard | West Indies, | Peculiar. of Female System. |
| Turner, James B. | Alabama, | Dyspepsia. |
| Turpin, Thomas J. | Maryland, | Hæmoptysis. |
| Walker, Percy | Alabama, | Elephantiasis. |
| White, J. Hamilton | New Jersey, | Asiatic Cholera. |
| Wickersham, Morris S. | Philadelphia, | Dysenteria. |

W. E. HORNER, M. D., *Dean.*

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TO THE MEDICAL PROFESSION.

IMPROVED SURGEONS' TRUSSES,

FOR THE IMMEDIATE RELIEF AND RADICAL CURE

OF

HERNIA AND RUPTURE,

INVENTED

*By HEBER CHASE, M. D.*

*Examined and approved by the Committee of the Philadelphia Medical Society appointed to investigate the merits of the various instruments now before the public for the treatment of Hernia.*

REFERENCE.

HEBER CHASE, M. D., having applied to the undersigned for the privilege of making reference to them in testimony of the value of his improvements in the form of Trusses, and in the construction of instruments designed to produce the greatest possible security in the retention of Hernia in its several forms, and the most promising chance of radical cure in this disease, we have no hesitation in permitting the required reference.

The subject has engaged the attention of the Philadelphia Medical Society, and the report of the special committee of that body, appointed on the occasion, is alike favourable to the claims of the instruments, and to the honourable and strictly professional course of the inventor.

REYNELL COATES, M. D.
WILLIAM E. HORNER, M. D.
SAMUEL JACKSON, M. D.
WILLIAM GIBSON, M. D.
THOMAS HARRIS, M. D.
HENRY BOND, M. D.
THOMAS S. BRYANT, M. D.
SAMUEL GEORGE MORTON, M. D.
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JOHN EBERLE, M. D., *Ohio.*

For the information of those labouring under ruptures, Dr. Chase is preparing, and will shortly publish, a popular work upon this complaint, with illustrative drawings; and in order to put those surgical practitioners who

intend employing his instruments in possession of his own views in their construction and application, as well as the results which have followed their use in his hands, a chapter directly addressed to the profession will be added.

Responsible practitioners throughout the United States, wishing to practise these instruments, will address the inventor, *free of expense.*

Any information in relation to the above named instruments and mode of treating the different varieties of Hernia, will be freely given to the profession.

Orders for instruments must be made through a surgeon, giving a statement of the case in question, the size of the patient, the kind of hernia, and side ruptured.

HEBER CHASE,
*No.* 111, *South Ninth Street, Philadelphia.*

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*A statement of claims in regard to certain improvements in the form of Trusses, by Heber Chase, M. D.*

Having observed on the part of certain individuals in different sections of the United States, who now consider themselves in possession of exclusive privileges in the treatment of Hernia by Trusses, a disposition to appropriate to their own use, under other names, the peculiar Trusses invented by myself, and lately submitted to an examination by a special committee of the Philadelphia Medical Society, I would remark, that these instruments, which met with the approbation of the committee, as appears by their report in the November number of this journal, are designed to be placed in the hands of *the profession.* I wish it to be distinctly understood also, that they are not presented to the public as connected with any other instruments heretofore in use for similar purposes.

In most cases of hernia I employ wooden blocks to produce the necessary pressure, but I do not confine myself to this material in *all* cases, as will be seen in the sequel: nor do I lay claim to any exclusive title to the use of wood merely, having already placed in the hands of the chairman of the committee a Truss with a wooden block, used long before the invention of Mr. Stagner's instrument; and if my inguinal block consists of an improvement upon any truss, it may be considered as a modification of those above mentioned, not of Mr. Stagner's.

This prior block can be used with some certainty of retention, and is not liable to produce the "strong danger of a consequent dilatation of the ring and exacerbation of the disease," which the committee urge as an objection to the common truss of "Stagner and Hood."—See Report, p. 310, 311.

These facts being stated, I will beg the indulgence of the reader while I answer many inquiries by letter, not only to the members of the committee, but also to myself, in relation to the improvements now offered and recommended in the treatment of hernia by trusses.

First. I do not claim any originality in regard to the material used, having employed in the treatment of hernia substances of every description, from the hardest to the softest, as recommended by surgeons, including caoutchouc, which has been condemned, and I think correctly, by the committee, as "liable to strong physiological objections."

Secondly. I claim to have devised and constructed, from woods and other materials, pads and blocks of certain forms and dimensions, which can be adapted upon surgical and anatomical principles to the different herniary openings. For a description of these blocks, see report of the committee.

Thirdly. I claim the employment of these pads, or blocks, in umbilical, ventral, inguinal, ventro-inguinal, and femoral Hernia,* and the adaptation of these instruments, by the agency of certain slides, which enable the surgeon to adapt the truss to the size of the patient, and to regulate its pressure with great certainty.

* In scrotal hernia, so called, where the bowels has passed from an inguinal hernia into the scrotium, upon the reduction of the bowel, the inguinal or ventro-inguinal truss should be employed according to the nature of the case.

Fourthly. I claim the construction and introduction of the moveable dorsal pad which slides upon the different springs, retaining all the advantages of the fixed pad, and obviating all the objections against it.

Fifthly. I claim the introduction of the plate to which the pad or block is fixed, and which is attached to the spring by means of screws. The advantage of this construction consists in being able to employ pads or blocks, which can be adapted to the different kinds of hernia occurring in the inguinal or femoral regions, in combination with the same spring, as the indications may require.

Lastly. I claim in these improvements the merit of originality and skilful application. Certain other improvements of the springs, and other parts of the different instruments I have also introduced, which will be better understood by an examination of the particular trusses.

After very considerable experience in the treatment of hernia, and continued observations in a great number of cases, I have established certain forms for the blocks before mentioned, which forms are well adapted to the general mass of cases; but that these are applicable in every possible case cannot be expected. Under certain circumstances particular instruments must be employed.

I do not confine myself in the treatment of hernia to wood alone in making pressure upon the ruptured parts, but I vary my treatment in relation to the material used, and its density, according to the nature of the case and state of the patient. Firm materials, however, produce the greatest certainty of retention, when their form is duly adapted to the case in question, properly applied, and judiciously used.

It has been stated by some, that in the treatment of a case of hernia, "three pads" were necessary to be employed; but, in answer to this assertion, I have only to say that such changes are not required. When one block is properly adjusted, it will be found to meet every known indication; and the adaptation of different blocks to the same case will be found not only unnecessary, but to the patient absolutely dangerous; for, when one block is well fitted to the case in question, it requires no force of argument to prove that a second or third, varying in shape or size, cannot be.

In placing these instruments in the hands of the profession, it must be remembered that much experience, a thorough knowledge of the anatomy of hernia, an acquaintance with the modus operandi of the trusses, and manner of using them, is absolutely necessary before the surgeon can rely with much confidence upon their ultimate success: and in the hands of the majority of persons who even now are engaged in applying trusses, these instruments can never be used with safety. Even the numerous contrivances which are now before the public for retaining the bowel, are in their hands dangerous to the patient, and in many instances other distressing diseases are induced by their misusage. Ample testimony on this point must have fallen under the observation of every surgeon; and at the present day it might almost be questioned whether the community at large are benefitted or injured by the use of trusses in unprofessional hands: for daily observation proves that many dangerous diseases, even of organs distant from the seat of the hernia, may arise from a badly treated or neglected rupture.

No truss should be applied except by those versed in the anatomy of hernia and principles of surgery; for, as the committee very justly remark, those instruments calculated to afford the patient the greatest possible good, are those requiring the most competent skill in their use.

Having enlarged sufficiently on this subject, *to the surgeon* no further remarks will be necessary; but common justice demands that I should not be held accountable for the failure of these instruments, when the truss is selected and applied by others than myself.

Since the report of the committee has been published, ample additional testimony of their benefit and utility has been witnessed, and the cases there detailed hold out the most flattering prospects. Many circumstances may combine to defeat the utility of these trusses abroad; amongst which is the danger of employing ill-constructed instruments. By the advice of several medical friends, as well as of the gentlemen of the committee, and in order

to do away with this difficulty as far as possible, I have made arrangements for the manufacturing of each variety of instruments, by the first surgical instrument makers in the city.

These instruments will at all times be constructed under my own supervision, and will from time to time combine whatever improvements may be made in the treatment of hernia and in the construction of trusses.

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